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A Question of Church Style.

IS there any style of architecture which should be considered as especially befitting a church? The question is not unnaturally suggested by two of our illustrations in the present issue, both of them representing the interiors of churches built recently, in London, for Roman Catholic worship. It might have been expected that in two churches built at only a few years' distance of time, in the same city, for the worship of the same community, there would have been some degree of similarity of style, some evidence of an accepted idea as to the style of architectural treatment most suitable for the expression of the idea of worship. Yet as a matter of fact there could not possibly be a greater contrast than between the style of these two buildings, the church at Spanish-place and the church at Chelsea. The former, the interior of which is shown in two pencil sketches by Mr. H. W. Brewer, is completely and frankly a reproduction of thirteenth-century English Gothic, with its vaulted roof, clustered columns, separate aisles, and its general expression of vertical tendency in architectural design. The latter is an interior in the conventional Late Renaissance English style, horizontal in general line, flat roofed, without aisles, and with a cove in the ceiling, cut into by that rather awkward-looking device of arches intercepting the cove, which is commonly called a "Welsh vault." The one, according to generally-received ideas, could not possibly be anything but a church. The other, if we were to take away the pulpit and the reredos with its crucifix, might pass (also according to generally-received ideas) for a concert-hall or the large reception-room of a town hall. It will seem to most persons as completely secular in style as the other is completely ecclesiastical. If the Chelsea interior were that of an ultra-Protestant or Congregational church, it might be cited as an example of the secularising tendency of Protestantism or Dissent, as compared with the specially ecclesiastical character of the Roman Catholic church, expressed with emphasis in the Spanish-place interior. Yet not only are both erected for the Roman Catholic ritual, but both emanated from the same office, although the personality of the architectural firm to which we owe so many good Roman Catholic church designs has been to some extent changed. Considering this, one is tempted to ask again the question which has been asked before—whether there is any such thing as an ecclesiastical style at all.

Of course, during the time of Wren and his immediate successors, a church in the style of the Chelsea interior would not have impressed anyone as unsuited in architectural expression to its purpose. All the London churches were then designed in that kind of manner. It was the Gothic revival, accompanied by the ecclesiological revival, which habituated people in this country to the idea that there was in Gothic architecture an element and an expression peculiarly suited to buildings erected for worship. At the same time, oddly enough, the leading architect of the Gothic revival expressed frequently and most decisively his dislike to the idea that Gothic was essentially a church style. According to him (and he did his best to put his idea into practice), Gothic architecture was equally suitable for every class of building, and to regard it as especially a church style was to take an entirely false and one-sided view of its capabilities.

General feeling and practice, nevertheless, has so far for the most part decided against Scott in this particular. Architects and clients who will take kindly to some variety of Renaissance architecture for secular buildings, are constantly found tacitly adopting the notion that a church should be Gothic; if not a pure reproduction of Gothic, at least a modification of the style; and probably very few of our readers, on first glancing at the interior of the Chelsea church in the present issue, before noticing its title or its details of furnishing, would take it for a church. Is this to be regarded as mere prejudice and habit, or is there anything of reason and fitness at the bottom of it?

It is a question partly of association, but not altogether so. If we take an archæological view of the subject, and think of the church in England as having realised its greatest power and influence during the Middle Ages, there is some reason for thinking it suitable to mark its revival by the same type of building. And, in an architectural sense, although it is quite true that Gothic was not in its own day a church style, but the one style for all building, still it is also true that the churches were incomparably the greatest and most important buildings erected, and that it is in them only that the style can be studied in its highest development; so that actually and *de facto* it was a church style, though not nominally. There is, therefore, much excuse, especially for the more conservative section of churchmen, for regarding it in the present day as a style peculiarly belonging to churches. But if we decline to regard the question archæologically, and claim to evolve our own style suitable for the church of the present day, there is still a lesson to be drawn from the Mediæval churches. Putting all question of mere style aside, they present us with examples of a grandeur and severity of treatment, and an architectural expression of mystery and aspiration, which assuredly is specially suitable for the architectural treatment of buildings dedicated to spiritual aspiration. We may aim at the same quality in architecture quite independently of any question of style. A church ought to be, architecturally, severe and grand in style, and ought to hold itself aloof from all littleness and commonplaces of architectural detail. It should have an effect of solemnity.

This quality is just what is notably absent in the phase of architecture which characterised the Renaissance churches of the Stuart and Queen Anne periods, in the style of which the church at Chelsea is a revival. And this seems to have been tacitly felt to be the case, since, in spite of the number of churches in this style existing in London, we have never got to think of it as a church style; we always connect it with the idea of assembly-rooms and concert-halls. And we are convinced that there is more in this than mere prejudice. The conventional details of pedestals, pilasters with a slice of entablature over them, and panelled ceilings of the kind common to the style, are all examples of the corruption of architectural style, and are at variance with its pure and normal elements; and the flat ceiling seems equally at variance with the idea of aspiration and mystery which should characterise a building erected for worship. For a church architecture we want to keep to the broader and more essential elements of architectural expression;

to avoid artificial conventionalities of detail and to aim at grandeur and severity of effect. In Gothic church architecture of the best period we do find these qualities, and hence there is a certain suitability in it for churches, independently of association. That it is in all other respects the most suitable style for modern churches may very well be questioned; but it is possible to realise the same grand and severe quality of architectural expression without imitating the details of the style. That at least is what should be our aim in modern church architecture; and in that quality the Stuart and Georgian church architecture, despite some of the very fine general conceptions of Wren, is notably deficient, and is therefore an unsatisfactory model for church design.

NOTES ON PRE-CONQUEST ARCHITECTURE IN ENGLAND.

By Professor Baldwin Brown.

II.—*Monkwearmouth Church.*

BEFORE entering upon any of the more general questions suggested by the plans of Saxon churches, it will be convenient to start by making acquaintance with one of the earliest as well as one of the most remarkable of these structures, a monument that possesses some of the most characteristic and peculiar features of Pre-Conquest work in general. This is the tower and western end of the church of St. Peter at Monkwearmouth, in county Durham, a general view of which, from a photograph, is given on page 259. The existing Saxon work is shown in main aspect, and in detail in figs. 15 to 21. It is of at least two different epochs, while within the church there also occurs some well-marked early Norman masonry; the rest of the building is Late Mediæval or modern. We are fortunate in being able to assign with practical certainty a date to the earliest and most interesting portion, comprising the western wall of the nave and the lower part of the tower, which originally formed a porch with a chamber over it. On the western side of the tower, as it at present stands (fig. 15) there are clearly seen the sloping lines of the original gable over the porch, and that the upper part of the tower is a later addition is further proved by the fact that, to a great extent, it blocks out the light from two original windows in the western wall of the nave. These windows are seen in the interior view (fig. 16). The tower walls out-

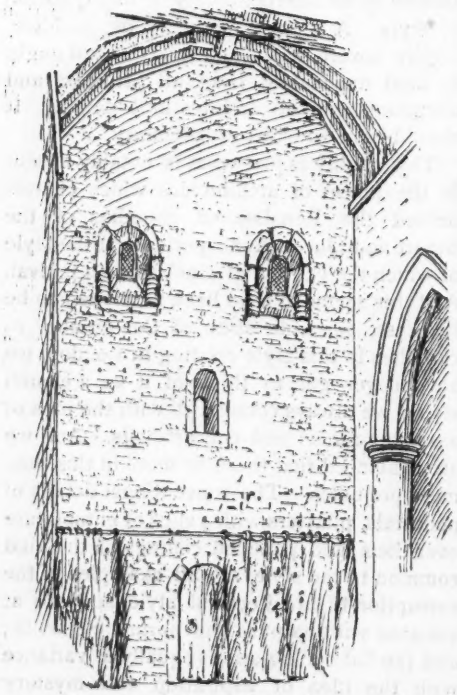


Fig. 16.—West End, Monkwearmouth.

side rise in front of them, and light is only admitted by splaying away the edge of the tower wall where it abuts on that of the nave, leaving an upright slit, the position of which is marked by the arrow at A, in fig. 15, while a side view is given in fig. 17.

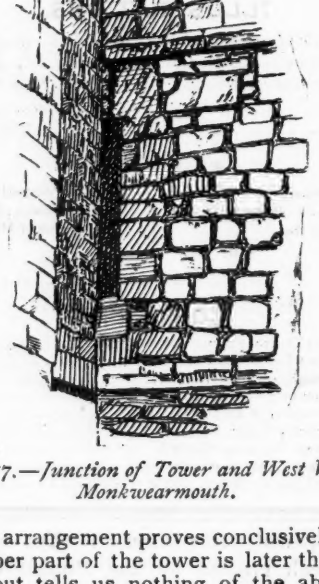


Fig. 17.—Junction of Tower and West Wall, Monkwearmouth.

This arrangement proves conclusively that the upper part of the tower is later than the base, but tells us nothing of the absolute dates of either part. Now we possess in the writings of Bede an almost contemporary notice of the first building of the Abbey of Wearmouth. Bede's account has been so often quoted that it is sufficient to say here that Benedict Biscop, founder of the monastery in the year 675 A.D., went over to Gaul and brought back with him some masons to build for him a stone church "after the manner of the Romans in which he ever took delight." From Gaul also he sent for certain workers in glass, and for sundry fittings of the church not elsewhere to be procured, he went himself on more than one journey to Rome. The fabric of the church must have been slight, for it only took a year to build; it was, on the other hand, tolerably spacious, for even in Bede's time the community of monks in the combined monasteries of Monkwearmouth and Jarrow, of which the former was the chief, numbered 600 souls. It was not the only church in the monastery, however, for we read also of a church of Our Lady and an oratory of St. Laurence, but it formed the place of assembly of the monks on important occasions, and was profusely adorned with several sets of paintings, had glazed windows, and a full equipment of sacred vessels, fittings, and vestments.

The question naturally arises whether any of the work of Benedict's masons actually survives. It is one of great importance, as the answer to it carries with it a settlement of the often-discussed problem, whether any of the existing relics of Saxon stone architecture really go back beyond the eleventh century. Now we know that the establishments at Wearmouth and Jarrow flourished greatly until the time of the disastrous inroads of the Danes, who, in the year 867, plundered and almost destroyed the churches and monasteries of Northumbria. From that date to the time of the Norman Conquest they disappear from the pages of history, but shortly after the Conquest they are, for a time, revived, and become once more the seat of monastic communities. In 1083, however, the monks from these restored monasteries are transferred to Durham, and the houses of Wearmouth and Jarrow sink to the position of unimportant subordinate cells to the great cathedral abbey.

As it is not likely that the church of Benedict Biscop would require re-building in the two hundred years between its first erection and the Danish invasion, we must ascribe the early work still existing on the site either to his time or to the period between 867 and the Norman Conquest, or, again, to the era of revival from about 1075 to 1083. With this latter date would accord the style of the Early Norman pier of the present chancel arch at the east end of the building, shown in fig. 18. It possesses the curious bulbous base which occurs in other examples of eleventh-century work in England, such as the crypt at Lastingham

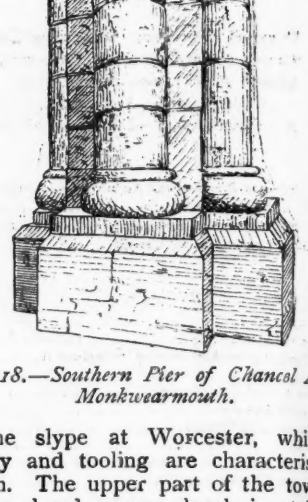


Fig. 18.—Southern Pier of Chancel Arch, Monkwearmouth.

and the slype at Worcester, while the masonry and tooling are characteristically Norman. The upper part of the tower, on the other hand, agrees closely in style with the numerous examples of square western towers, occurring in Northumberland, Lincolnshire, and other parts, which are not Norman in character, and are generally ascribed to the first half of the eleventh century. In style this tower, which has no Norman features about it, would represent a generation earlier than the pier of the chancel arch. Since we are told by Simeon of Durham that the Church of St. Peter, at Wearmouth, was burnt by Malcolm, King of Scots, in the year 1070, there may have been a restoration between 867 and that date, and to this the upper part of the tower might very well belong. The questions of date now narrow themselves down to the query whether the lower portion of the tower, which we have seen to be prior to the upper, is also due to an earlier restoration after 867, or is a relic of the original work of Benedict Biscop in the seventh century. Now, Simeon of Durham, writing in Northumbria in the early years of the twelfth century, describes the havoc wrought by the Danes as so extensive that the monasteries of the province were reduced to a desert condition, only bare walls being left, and the very sites of some passing out of knowledge altogether. The revival of 1075 was brought about by a pious pilgrimage undertaken by some monks from the south of England, who "had learned from the history of the Angles how that the province of the Northumbrians was formerly the home of crowds of saintly monks," and who wished to visit the holy but now deserted sites.* When the country had been reduced to such a condition, it is almost certain that any rebuilding of the churches ruined by the Danes would have been of a somewhat perfunctory character. The earliest work at Monkwearmouth is, however, marked by extreme care and elaboration in detail. It would have been practically impossible in that region between 867 and the eleventh century, while for its ingenuity and thoroughness it is exactly what we should expect from the wealthy and enthusiastic Benedict. It may be added that the style of the work, though in many respects puzzling, agrees better with the early than with any later date.

The following are its main features. The West wall of the church (fig. 15) measures externally 23 ft. 6 in. in width, and 31 ft. in height to the beginning of the slope of the gable which ran upwards at an acute angle of about 50 deg. The drawing gives the line of the original gable on the north side as it was seen in 1865, before the present north aisle was built. In the centre, an arched doorway 3 ft. 6 in. in width gives admission to the interior, and to the west of this is built a porch, measuring internally

* Simeon of Durham, "Hist. Dunelm. Eccl.," III., 21.

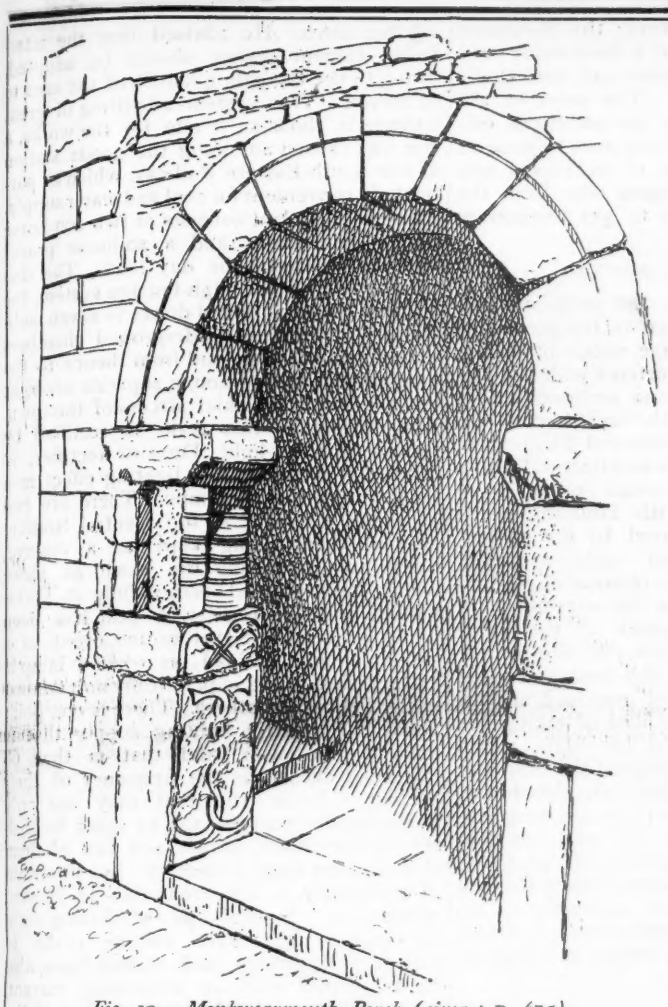


Fig. 19.—Monkwearmouth Porch (circa A.D. 675).

8 ft. from north to south by 9 ft. 5 in. from east to west, and covered with a barrel vault of stonework running east and west, 12 ft. 6 in. high to the crown. There are doors to the porch on all four faces. Those to the north and south, 2ft. 5in. in width, have their jambs rebated and heads splayed for doors opening outwards. The east door leads into the church. The western archway, 4 ft. 10 in. in width, which has never been closed by a door, is of extremely elaborate construction, and gives its stamp to the whole work (fig. 19). Its jambs are composed of upright slabs lining the opening, surmounted by other slabs laid flat and bonding into the wall. On the surfaces thus formed there is

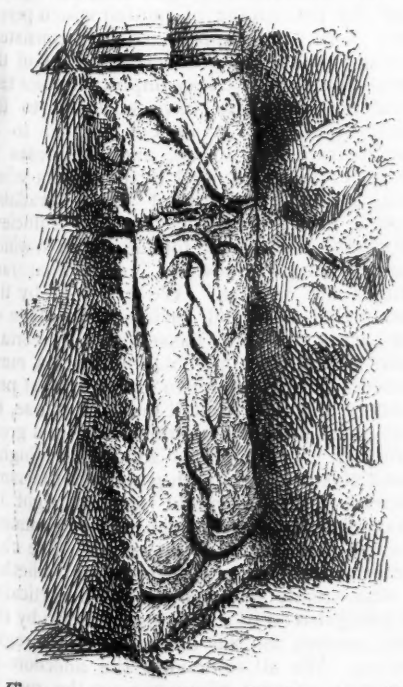


Fig. 20.—Southern Jamb, Monkwearmouth.

carved on each side of the doorway an ornament consisting of a pair of serpents intertwined, after a fashion, which will be understood from the drawing (fig. 20), which shows the condition of the slabs when first uncovered in 1865. On these slabs, as on a plinth, stand on each side two stone shafts, about 21 in. high by 10 in. in diameter, ornamented with an elaborate system of projections, and cuts that have evidently been produced in a lathe. These turned mouldings are far superior in their delicacy and accurate cutting (fig. 21) to the general run of Saxon baluster shafts. These twin colonnettes carry a massive impost 11 in. high, chamfered beneath, and worked on all its edges with a roll moulding. From these springs the arch, formed of nine carefully-cut voussoir stones of varying sizes, running right through the thickness of the arch, and once recessed on both outer and inner face, after the manner of the Ionic architrave. Above the arch, at a height of 13 ft. 3 in. above the ground, the face of the porch is enriched with a flat string-course, composed of various panels framed with cable mouldings, and carved in low relief with representations of animals, apparently of a somewhat grotesque kind.

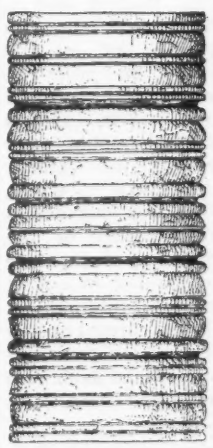


Fig. 21. Baluster Shaft, Monkwearmouth.

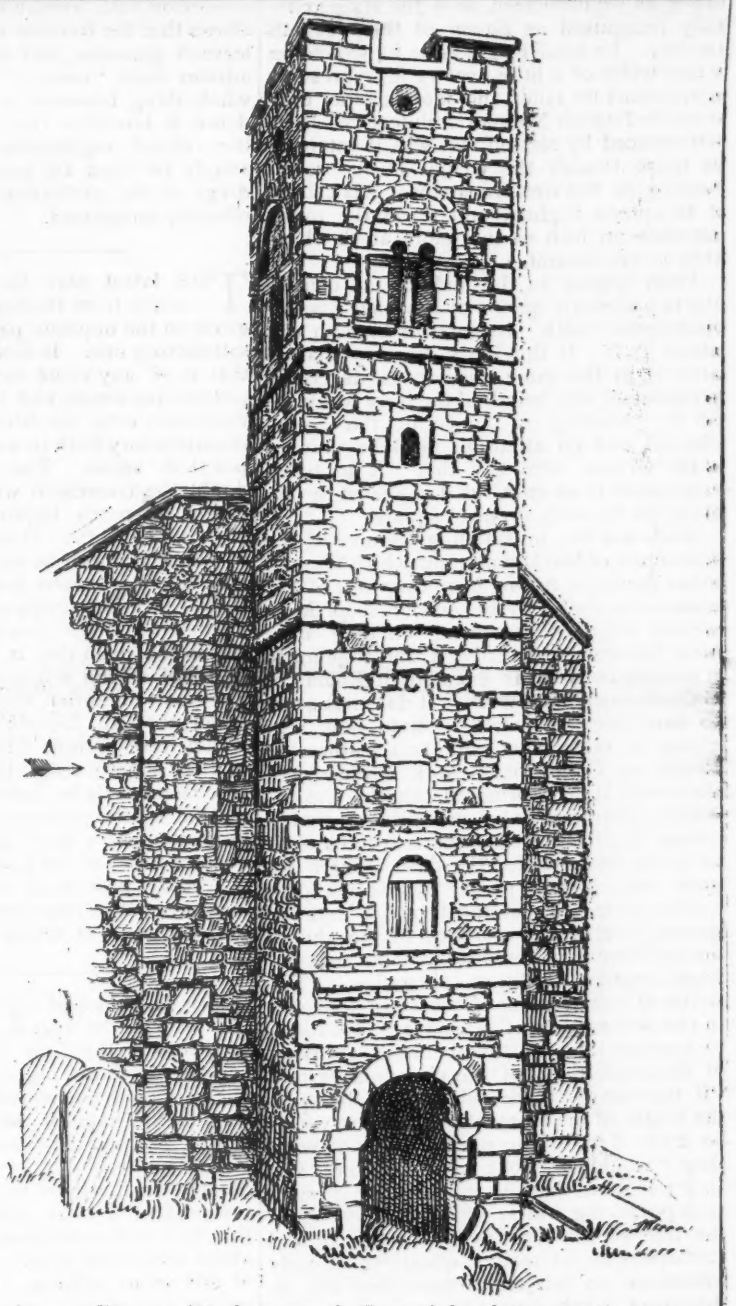


Fig. 15.—Monkwearmouth Tower, before last restoration.

At a higher level comes a comparatively large window, giving light to the chamber over the porch, from which also a narrow opening, now the only means of access to the interior of the tower, forms a communication with the nave of the church. Above this again is a second string-course, and from this level, at a height of 21 ft. above the ground, began the slope of the original gable that surmounted the porch. Under the apex of this gable there are five large stones let into the wall, the uppermost of which projects like a semicircular disc set horizontally, while the second shows the outline and shape of a human head, the tip of the lobe of the right ear being still, on a close inspection, visible. The two large stones next below have been hacked away flush with the wall, and the lowest has evidently been renewed in more modern times. It is clear that there was a statue here in high relief, about 6 ft. in height, and as it is placed with reference to the original gable, and has about it no marks of being a later insertion, it is presumably of early date. A work of sculpture of the kind on so large a scale may astonish us in the seventh century, but it is at least as likely to have been executed then as at any later period up to the twelfth. The contemporary church built by Wilfrid at Hexham was adorned, we are told by a Hexham writer of the twelfth century, with divers figures carved in bold relief on the stone. The rest of the

tower, as we have seen, is in the style generally recognised as Saxon of the eleventh century. Its total height is 60 ft., which, on a face width of a little over 11 ft., represents proportions far taller and more slender than occur in English Norman architecture. It is not reduced by sets-off, nor was it intended to taper, though the weight of the tower bearing on the western archway has caused it to spread slightly, and made the tower measure an inch or two more at the base than at the summit.

With respect to the body of the church, the two westerly quoins of the nave give us its external width. Its interior breadth was about 19 ft. If the Early Norman chancel arch is in the same position as its Saxon predecessor, the length of the nave would be 66 ft. Nothing is known of the Saxon chancel, and no attention need be paid to older writers, who say that "it probably terminated in an apse," as it is almost certain that, like Escomb, it ended square.

Such are the outstanding features of the oldest part of Monkwearmouth which bears so many marks of having been the work of the masons employed by Benedict Biscop. Most writers on this interesting building have been content to describe it and to point to it complacently as an example of Roman or Gallo-Roman handiwork. It does not seem to have been sufficiently noticed how very unlike in many most important features to Roman or Gallo-Roman work is the oldest portion of Monkwearmouth Church. The un-Roman character is so conspicuous that it makes it all the more important to be clear as to the evidence for the date. There is a good deal in the porch that is certainly "after the manner of the Romans," but the general form and proportions of the church are not Roman or Gallo-Roman, but descend from another tradition altogether. The writer of the account of the church quoted in the new edition of Murray's "Handbook to Durham and Northumberland," speaking of the proportions of the church, says that "if the rule of 'three cubes' was observed, the height of the side walls of the nave would be 22 ft. 8 in." The question is not what they "would be," but what they are, and they rise more than 30 ft. above the ground, thus producing a ratio of height to width in the interior that is wholly unclassical, and that opens up interesting questions of early influences on our architecture that will be discussed in subsequent papers.

NOTES.

THE results which would be likely to follow from the adoption of a Registration Act applying to architects are delightfully illustrated by a circular which has been sent round to a number of members of the architectural profession during the last few days, from a newly-constituted body which calls itself the "Institute of Architects and Surveyors," and the object of which, indicated in the most barefaced manner, is to provide a Society which, in the exceedingly improbable event of the passing of a Registration Bill, would take under its protection the class of architects and surveyors who would have no support from the Institute or the Surveyors' Institution. This is put almost in so many words in the circular: "As in all probability this Act will affect you, my Council thought you might desire to join to strengthen our hands in an endeavour which we are about to make to secure a larger protection for our members. *If we do not do this at once, it is probable that the members of certain Institutes may secure inequitable professional monopolies.*" The italics are ours. The whole movement for registration was started, as we remarked at the time, by an association of persons who were mere nobodies in architecture; but there seems to be "within the lowest deep a lower deep," disclosed by this unblushing circular. The President, Vice-President, and Council of this "Institute" are a group of persons whose names we never heard of before in connexion with architecture; the document shows that the framers of it have never even learned grammar, and they call their legal adviser their "council." The point of the whole thing, however, is the additional evidence it furnishes that any such scheme as the official registration of architects will simply be used by persons who form the dregs of the profession to get themselves officially recognised.

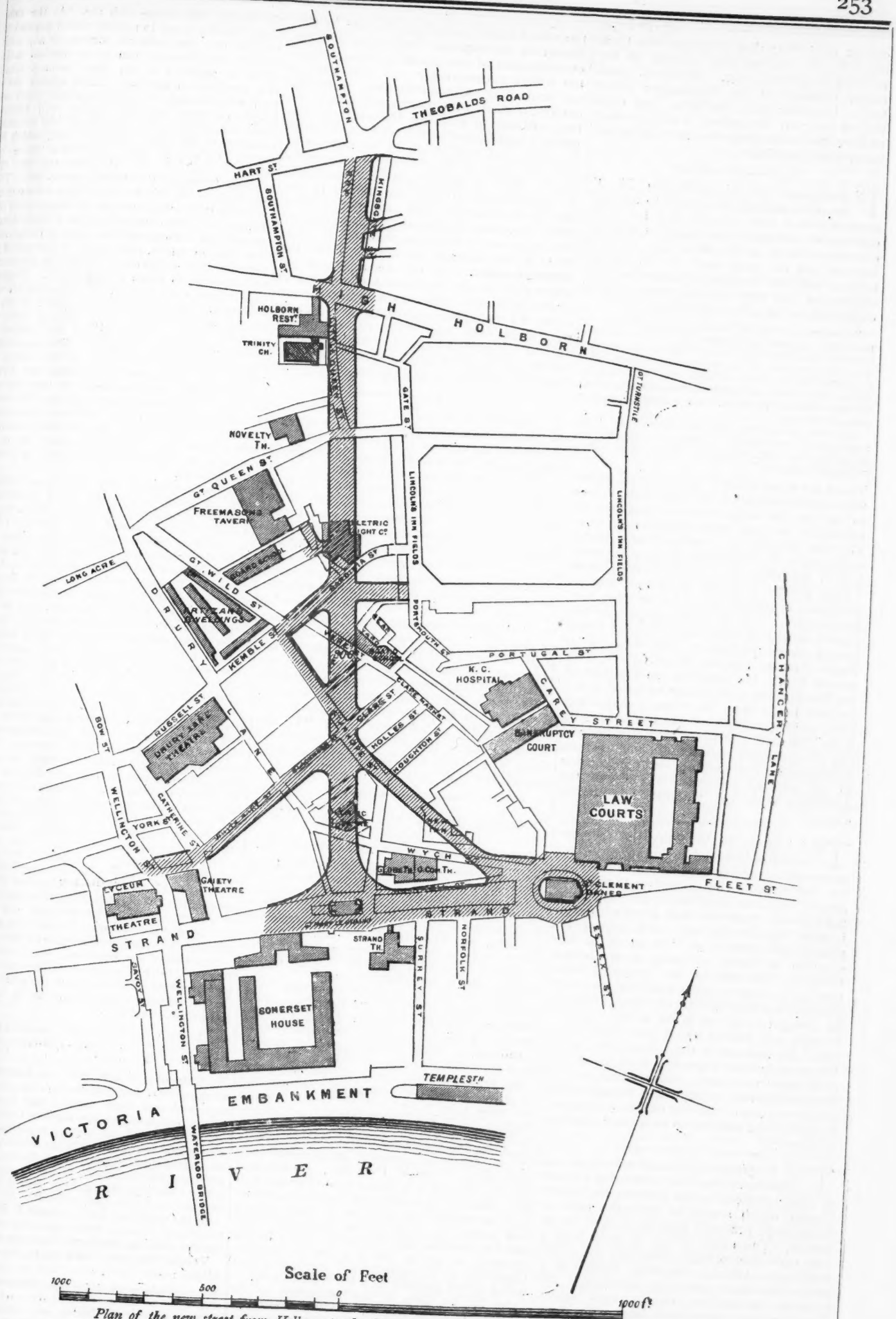
THE latest plan for the proposed new street from Holborn to the Strand, as given on the opposite page, seems in itself a satisfactory one. It interferes with nothing that is of any value in an architectural or picturesque sense, and the treatment of the connexion with the Strand and Fleet-street is satisfactory both in an architectural and a practical sense. The weak point is no doubt the connexion with Holborn, which would be much improved by the spreading out of the street right and left to enter Holborn at an oblique angle, and give a wider space for the movement of traffic at this turning-point, in the same manner as at the junction with the Strand. But in the main this is the best and most practical of the schemes proposed, and we are glad to find that the idea of taking the street through Lincoln's Inn-fields, which would have entirely destroyed the character of that square, seems definitely abandoned. It is melancholy to have to record, however, that after six years of talk, and the final production of a good practicable plan, the dilatory policy of the London County Council has again postponed the execution of an improvement so imperatively demanded, and the realisation of which seems as far off as ever.

IT is to be hoped that the proposed clearance of the region behind the Strand, westward of the Law Courts, is not to be another of those improvements which are talked of and postponed. Those who have been in the habit of taking occasionally the short cut from the Strand to Lincoln's Inn Fields by way of the alley called Clare Market, must rejoice to think that there is a prospect of a clean sweep being made of this foul and insanitary corner of London, about which the fœtid odour of generations of dirt seems to hang. The entire clearing-out of every such site as this is a step towards the sanitary millennium, for which one must feel thankful, slow though the progress is.

THE discussion which was raised in the County Council as to the question of employing the Architect to the Council to carry out all the buildings on the Milbank site was a rather foolish one. Some members seemed to think that it was a kind of slight to Mr. Blashill that he should be commissioned to lay out the ground, but that it should be proposed to call in outside architects to design the principal buildings. We should hardly suppose Mr. Blashill would take that view; at all events we cannot. The consideration of the way in which a site like that should be laid out would come naturally into the province of the official architect; the designing of separate buildings on it does not; and it is not at all desirable that important buildings on different sites should all be carried out by the same official architect, which must inevitably lead to a kind of official sameness of character being stamped upon them.

THE municipal electrical works at Tunbridge Wells, which were opened on Wednesday, show that those towns which are in no hurry to adopt the electric light get the advantage of the experience gained by the pioneer systems tried elsewhere. Although the Corporation got their Provisional Order in 1890, it was nearly three years later before they asked Mr. W. H. Preece to report on the best method of lighting the town. He advised that the alternating current system should be adopted, owing to the straggling nature of the area to be served. This system admitting of great latitude in choosing a site for the works, a site was chosen adjoining the goods station of the South-Eastern Railway, which is particularly convenient for coal and water supply. The present plant consists of two 100-horse power alternators, and a 20-horse power alternator to take the day load. The distribution is on the high-tension system, the current being supplied direct to seven sub-stations, which are underground chambers in the public roads, and from thence to the consumers. In addition, a separate arc-light main is laid in the chief streets of the town. The current in this main is rectified by means of a 25-light Ferranti rectifier, in order that the maximum lighting effect may be got from the arc-lamps. There are two of these rectifiers in the Central Station, one of them being kept as a reserve. They are practically the same as those which have worked successfully at Portsmouth, and the regulating gear has been found so sensitive that in the event of a sudden change of load, as when a lamp is extinguished, there is practically no variation in the light of the others. There is one point about the electric lighting supply that is open to criticism, and that is that 68 has been chosen as the frequency of their current. It is true that they are only following the example set by other English supply companies, hardly any two of them choosing the same frequency; but this want of uniformity is not creditable to English electricians. Special types of choking coils, arc-lamps, &c., have to be made to suit each frequency, and meters have also to be tested with an alternating current, whose frequency is the same as that of the supply which they are afterwards to measure. All this entails a quite unnecessary increase of labour to the manufacturers, as nothing is gained by choosing an abnormal frequency.

IN another column we print an abstract of a paper read before the Society of Engineers on Monday last, by Mr. R. E. Middleton, C.E., entitled "The Relative Value of Percolation Gauges." The subject is by no means new, but it is opportune in view of the interest taken at the present time in all matters pertaining to water supply. The gauges used are well-known to everyone who has studied the water-supply question, and the circumstance that "there are remarkable discrepancies between the records of the gauges themselves, and that the percentage of rainfall which percolates does not appear to be consistent throughout," is not wonderful in view of the facts. There is one very important point that does not seem to have occurred to the author (at least, it is not alluded to in the abstract sent to us), and it appears to be generally overlooked by engineers when dealing with quantity of water available from a given area, that is, that sufficient allowance is not made for the errors to which the ordinary "Snowdon" or similar rain gauges are subject. We are told by the author that such and such a percentage of the actual rainfall passed during certain years through the percolation gauges mentioned. Now, in order to arrive at that percentage, the total rainfall must, of course, be first ascertained, and herein consists a great difficulty. The methods adopted are highly unsatisfactory, even with gauges of the same pattern, where it might at first sight be imagined that, possessing errors in common, the results must be comparative. The character of a particular shower of rain, whether it was steady and coming down vertically, or being driven in a slanting direction by the wind, makes all the difference in the registration. We all remember the anecdote of the meteorologist who went on the roof of his observatory, and speedily got wet through by the "blinding rain," and all the time his rain-gauge was registering practically *nil*. Rain is extremely local in its occurrence,



Plan of the new street from Holborn to the Strand, as proposed by the London County Council.

and the proportion of it available for water-supply purposes from underground sources largely rests with the daily distribution. And if we have continuous rain for a week, more water is available than if the rainfall is spread over a long period in driblets. The problem of evaporation, much as it has been studied, is not yet well understood; and we think that all these things in a certain measure account for the discrepancies alluded to by the author. That a large quantity of water passes out of the London basin underground and is lost is a well-known fact, and it has more than once been proposed to search for and utilise it; but we

cannot think that that loss amounts to as much, in the case of the Thames, as 697 millions of gallons daily. We would much rather believe that the rain-gauges are at fault. However, Mr. Middleton has done well to bring up the subject, if only to show us how little reliance can be placed in certain water-supply statistics.

IN the pages of *L'Architecture* M. F. Jourdain has had the idea of "drawing" some eminent men of the day for their opinions on the state of architecture, and has commenced with M. Daudet. The eminent novelist has not very much to say on the subject, and what he does say is neither very instructive nor very complimentary: it is comprised in the following paragraph:—

"Que pensez-vous de l'architecture moderne? Je pense que je n'en pense rien, et c'est un sérieux reproche que cette indifférence où elle laisse des yeux que l'art intéresse et préoccupe. Quelques jolies reproductions de vieux modèles surgissent çà et là, sur un quai, dans une avenue, mais en général la maison moderne est laide. On a réussi quelques gares, c'est tout.

Comment je voudrais l'architecture?—Avant tout, appropriée à notre climat. Quant à lui indiquer sa voie, j'en suis fort incapable, ne m'étant jamais occupé de votre art."

There are some other French men of letters who would probably have a good deal more to say on the subject, and will perhaps be persuaded to give their opinions in time. For the present, the only other witness examined by M. Jourdain is M. Roty, the well-known medallist, who considers the Greeks "plus gentils que les modernes, car ils mettaient beaucoup de sculpture dans leur architecture," and is well content that the French architects who have studied at Rome should make pediments and columns in Paris—"ça me rappelle Rome de loin, c'est encore bon." He loves the pen sketches of the Renaissance architects to be found in the Louvre, better than the "beaux chapiteaux bien lavés q'on envoie tous les ans de la Villa" [Medici]. In short, M. Roty is one of the old-fashioned *dilettanti* in architecture. Naturally, he looks with great apprehension to the possible imitation in Paris of the American style of "maisons de trente étages."

THE late Mr. W. W. Story, the sculptor, who has just died in his seventy-sixth year, may be said to have belonged rather to the last than to the present generation of artists. He was an instance of the artist of the cultured type, who had many objects of interest besides his art; and indeed his pleasantly-written book, "Roba di Roma," once to be found on many drawing-room tables in this country, was probably more familiar to many persons than his sculpture. Without meriting the title of a great sculptor, he brought to all his works a refinement of thought and feeling which gave them interest. He was one of the competitors for the Byron monument competition in London a good many years ago, which ended so unfortunately, and produced a sketch-model which was one of the best designs submitted, though it was said not to be a good likeness of Byron.

THE *Engineering Record* mentions and illustrates a method of treating a street of steep gradient in the town of Burlington (Iowa), which seems to have the merit of being both practical and decorative in its results. The street seems to have been a very wide one to begin with, and the actual roadway for vehicles has been formed in a serpentine curve touching alternately the extreme border-line of the road space. This has been paved with brick with stone curbs, and the spaces between the loops laid with turf, planted with trees, and supplied with benches. The gradient for vehicles has been thus reduced from 24 in 100 to 14½.

THE memorial presented by the tradesmen of Bishopsgate Within to the Commissioners of Sewers, with respect to the struts which have been in use in that important thoroughfare for two years, opens up a question of considerable importance to the building community and the general public. The Commissioners, naturally enough, reminded the memorialists that the responsibility of securing the safety of the public in such cases rested with the District Surveyor, and that it would be unwise to make any move in the desired direction without his sanction and approval. Eventually it was decided to refer the matter to the Streets Committee, who will not, it may safely be assumed, take any steps to remove the supports in question without the consent of the District Surveyor. That the shorings complained of are a source of annoyance to the tradesmen concerned is probable enough, but they would find the collapse of a neighbouring house a more serious annoyance, even apart from the consideration of the duty of providing for the safety of the public, for which in this respect the District Surveyor is responsible.

IT may be as well that some members of the architectural profession (the remark naturally only applies to some, but unfortunately to far too many) should understand that it is of no use for them to send up to us commendations of their own work written by themselves. The unblushing manner in which this is done by some professional men is astonishing. A few days ago we received a notification of the result of a competition, concluding with the remark that "the conditions imposed by the instructions rendered the problem a very difficult one, but that it had been solved in a very able manner by the successful competitor;" the words being written by the architect himself on note-paper stamped with his own address. This is an exceptionally bad instance, but the insertion of laudatory adjectives by architects in sending a description of their own work is, we regret to say, exceedingly common, and nothing could be in worse taste. We are always obliged to architectural correspondents for practical descriptions of their work, but without the "adjectives."

MANCHESTER ARCHITECTURAL SOCIETY:

QUESTION OF EDUCATION AND COMPETITION.

IN his opening address, delivered on the 1st of this month, Mr. John Holden, the President of the Manchester Society of Architects, after speaking of the loss which the Society had sustained by the recent death of two of its most esteemed members, Mr. Murgatroyd and Mr. Lawrence Booth, and touching on some matters of local interest in connexion with the change in the meeting-place of the Society, said:—

"The classes in architecture which were specially arranged between the Committee of the Technical School and the Council of this Society have not, I find, been attended as satisfactorily as I could wish. These classes cannot fail to be of great use to the students, especially to those who desire to take any position in the profession and to pass the examination necessary for that purpose, and while I do not advocate the system of cramming, which is bad in principle, still it is greatly to the advantage of the student that his energies should be directed into a proper channel instead of being wasted on matters of comparatively little importance. It would, I am sure, be a matter of regret to most of us if, from a want of proper support, these classes should be discontinued, and we must remember that there are so many subjects now thoroughly taught in the Technical School and its branches, and the classes are so largely attended, as a rule, that it is hardly likely the Committee of Management will continue to deal with a subject specially for a few students only.

As to the value of the instruction to be obtained at these schools, I think there can hardly be a doubt. We must remember that teaching is as much an art as architecture itself, and a person requires to be trained to it just as much as to any other profession. It is not every professional or business man who can satisfactorily impart a knowledge of his particular branch to a student, although he may be a master of his craft. This I have particularly noticed for many years, and I think you yourselves, if you will consider the subject, will agree with me. At the same time, I wish you not to misunderstand me, and to suppose that the technical schools, or any other similar establishment, can by themselves make either an architect or any other business man; this would be a mistake. These schools are a most valuable adjunct to all businesses which are taught in them, and the student will receive there instruction in the theoretical and practical branches of his own particular craft, which he cannot obtain at his employer's office or works. And it is the interest of the teachers to impart this knowledge to him. The principals or employers now-a-days are busy men, and have neither the time nor (in many cases) the inclination to sit down alongside a student and instruct him. Generally the youth is passed into the office or works, introduced to the notice of the chief clerk or foreman, and left in his charge and expected to make himself useful. He must then depend upon himself. If he pushes his way he may get instruction and assistance; if not, he simply works out his time. In any event he obtains simply a knowledge of the business as carried out in that particular office or establishment, and we all know that no two offices are alike. All professions and businesses are divided into specialties, and none more so than our profession. It is therefore important that the student should, in addition to his ordinary office routine, pass part of his time in another place, where he will receive that instruction which he cannot obtain amidst the worry and bustle of a business establishment.

I speak strongly on this subject, as I wish not only the students but the older members to remember it, and to allow to their pupils the time to enable them to attend these classes. I know that in a busy establishment there are times when all hands are required, but I ask you, the seniors, to discriminate between your pupils and your *employés*. Remember that the pupil comes to you for a certain purpose, and often—in fact generally—pays a large premium, and is therefore entitled to consideration; in fact, you are under moral, and generally also legal, covenants to teach him his business as such is carried on in your establishment, and you are to a certain extent responsible for his future. This is an entirely different position to your relations with your *employés* or clerks, who are engaged to do your work, and to whom you are under no obligation as to teaching. I ask you, therefore, not only to allow your pupils the necessary time to attend the classes provided for them, but also use your influence and to see that they do attend; to, in fact, exercise that control and supervision over them which you would do over your own son.

I confess that I should like to see more of our Manchester students entering themselves for the Royal Institution examinations. There must be a very large number of pupils in the different offices in the city and suburbs, even those represented in this Society, yet very few put in an appearance. The examinations have been brought to Manchester now many times not without trouble, and have been conducted here at a very considerable expenditure of time on the part of a comparatively few members, yet I notice that very few of our Manchester students take advantage of them. If you examine the attendances at the preliminary examination one in each year, you will find that in—

1893, Novem.: 9 students attended, none from Manchester.
1894, March: 16 ,, 3 from Manchester (all passed).
1895, March: 25 ,, 2 ,, (none passed).

So that, out of fifty students attending these examinations, but five were from the principal city, and but three passed; and I particularly notice that many of the smaller towns send up two or three students to each examination, while a large and important city like Manchester, with its several hundred practising architects, can only provide three candidates at the most. There is surely something wrong here, and it is for us to find out the reason and rectify it.

In the qualifying examinations I find the same conditions existing, the proportion rather better, but the numbers small and the result poor.

Taking the same three years, the result is as follows:—

1893, 8 candidates attended, 4 from Manchester, 1 passed.
1894, 8 ,, ,, 2 ,, ,, 1 ,,
1895, 5 ,, (relegated) 1 ,, ,, 1 ,,

These results cannot be satisfactory, and I must confess I do not understand it.

On the roll of this Society, which, as you are aware, does not include the whole of the practising architects in the city, there were in

1892-3 ..... 24 students.
1893-4 ..... 30 ,,
1894-5 ..... 36 ,,

Another matter which has exercised my mind has been the use of the library. The library is not, of course, as yet a very large one, although it is increasing; still, it even now contains a considerable number of the best standard works. Practically it contains all that is required for an ordinary student in architecture who wishes to pass the examinations. The register shows, however, that nothing like the use is made of it that the character of the books deserves.

Now, a word or two about the prizes given by the Society. I note that the small 10s. and 5s. prizes which entail comparatively little labour or study on the part of the student are taken up, but the larger prizes are either not competed for, or the responses are poor and unworthy of the sum to be awarded. One prize of 5*l.* 5s. has not been awarded since 1891. The larger prizes, which are given on the recommendation of the Technical School Committee, I am pleased to say remain this year in Manchester, and I have every reason to believe have been well earned. This question of education is a serious one as affecting the Society, and I confess that I cannot understand it. I should be glad of any information which would assist the Council in dealing with it, and I invite communications from the students and others on the subject, which may explain in any way the great lassitude and indifference which seems to run through the body of students. I am sure that the Council will carefully consider any such communications, and, if possible, meet the difficulty and remedy the defects.

For some years past I have noticed the gradual decadence, I may say, of the study of Classic architecture amongst the students; the more catching and sensational styles have been adopted and brought to the front. This is, I venture to think, a mistake on the students' part; as a thorough grounding in the principles of Classic work is of the greatest use, and enables the student more easily to adopt other styles which come up for a short time, and then, as it were, pass away. Understand, I do not complain of the use of these sensational productions, but I consider that they are not suitable as a basis for the education of the student. No doubt they suit the present taste of the public, but the impression is not lasting, and to my mind there is a want of boldness which detracts from the dignity of the building. The use of large quantities of surface ornament is low relief and small and thin mouldings attracts attention to parts of the building, but not to the building as a whole. This society has for many years offered a prize for some subject in connexion with Classic Architecture, but of late years the response has not been at all satisfactory and for the last three years the prize has not been awarded. I hope that it will be responded to this year in a more satisfactory manner.

I feel bound, however, to say here that I do not personally agree with the withholding of a prize when there is any response to it. When it is once offered, I consider that it belongs to the students, and that it should be awarded (unless, of course, the response is a burlesque). The work of a student should not be criticised in the same manner or with the same strictness as that of a body of experts in a competition for a building. The object of giving prizes in competition by students is to encourage them to read and work in their own time and to obtain information which will be useful to them afterwards, and to withhold the prize afterwards disheartens the student, and possibly prevents him from trying a second time. I do not know of anything which would sooner dishearten a youth who has done his best in tackling a subject which others have fought shy of, than to be simply told that his production was not of sufficient merit. Strictly speaking, I am well aware that the work produced by most of the students is not, in a commercial sense, worth the amount of the prize, but that is not, in my opinion, the question. The prizes are offered for the purpose of encouraging the youths to study and to work in their own time, by which means they will gain knowledge and experience, and will also, by contact with others, gauge their own abilities; and, personally, if I can induce the student to read and think and to place his thoughts on paper, I should feel that the money had not been wasted. Every care should be taken not to discourage a student at the commencement of his career, and I hope that those who have to examine the productions of the students during the coming session will bear this in mind.

There is one other matter to which I wish to refer shortly—the question of competitions. Unfortunately this seems to be a standing complaint which comes before us each year, with its record of improper conditions imposed by committees, unjust decisions, and consequently time and money wasted in preparing drawings, and the remedy seems to be as far off as ever. Certainly, when I read some of the conditions now imposed, it is a matter of surprise to me that architects will compete. Amongst the conditions we find: that the committee 'does not bind itself to employ any of the competing architects to carry out the work'; that 'the whole of the drawings (however small the premises may be) shall become the absolute property of the committee,' &c. Then the accommodation required is given (generally much in excess of what may reasonably be expected for the amount proposed to be expended), and the amount to be expended also fixed. The result of the last condition very often is, that the architect is landed in a difficulty when he endeavours to obtain tenders, and the work passes into the hands of some other person at the option of the committee. So far as the work is concerned the professional assessors are at times ignored, the committee not being under any obligation to carry out his selection. The premium may be paid in accordance with his award, but the work goes to someone else who may have friends on the Board. This course acts very hardly on the striving architect who may have endeavoured faithfully to conform with the instructions. The carrying out of the work is, of course, the real object of the competitor so far as he is concerned, as the premium, in all probability, will but about pay costs out of pocket, and sometimes not even that.

The question is a very difficult one to deal with, especially so long as architects of position can be found ready and willing to enter into competitions on almost any terms. If leading architects would refuse to compete, excepting on fair and proper conditions, there might be some chance of obtaining better conditions, but until this is done, I really cannot see my way out of the difficulty."

MAGAZINES AND REVIEWS.*

The *Gazette des Beaux-Arts* contains an article by M. Maurice Maindron on "The Armoury at Madrid," with illustrations of some grand helmets and other pieces of armour. The etchings of the two Tiepolo's are treated of by M. Buisson. M. Marcel Reymond contributes an article on Jacopo della Quercia and his works, under the serial heading "Florentine Sculpture," in which he draws attention to della Quercia's grand and severe treatment of the nude, especially illustrated by his bas-relief representing Adam tilling the ground. An interesting article by M. W. de Seidlitz treats of the subject of "La Proprieté Artistique et la Contrefaçon," in which a good deal of curious information is given, illustrated by examples, as to what may be called the "stealings" of various engravers, and their tricks of introducing figures and accessories from the works of their predecessors and contemporaries, or of modifying and altering the compositions which they engraved.

The *Art Journal* commences an illustrated essay on Philæ, written and illustrated by Mr. G. Montbard, which will be of special interest at the present moment. The illustrations are beautiful, and the writer's indignation as to the proposed treatment of Philæ we, of course, entirely sympathise with; but it is unfortunate that he should spoil the effect of his remarks by his evident entire ignorance of the engineering question, and by speaking of the reservoir as "some ridiculous construction, some impossible dyke." That is the way people do mischief, and injure their own cause, by not knowing both sides of a subject. Putting Philæ out of the question, the proposed construction was neither "ridiculous" nor "impossible." An article on the laces belonging to the Queen of Italy is accompanied by illustrations of some beautiful work. "Art-workers at Home," by Mr. F. Miller, deals with "Potters and Painters," with the work of Mr. de Morgan and of some of the artists who work for Messrs. Doulton.

The *Studio* is occupied partly with "Quebec as a Sketching Ground," illustrated by a good many architectural sketches there, by the author of the article, Mr. Goodhue. "A Painter in the Arctic Regions" is an interview with Mr. J. W. Stokes, illustrated from his pictures of arctic scenery. "Another Word about the Poster" is contributed by Mr. Arthur Fish, in reference to the work of the artists who adopt the name of "J. & W. Beggarstaff," whose object seems to be to reduce the poster as much as possible to a mere silhouette, suggesting a good deal, but defining nothing. It is possible, in time, to get tired of this.

The *Revue Générale* contains a chapter from Ruskin's "Seven Lamps," translated into French by M. O. G. Destrée. The translator makes no pretence to regard Ruskin as a great critic in art; he considers that his works want precision and clearness, and are full of contradictions, but he translates him for French readers as one who has had a great influence on English contemporary art. The chapter selected is "The Lamp of Memory."

There is remarkably little of artistic or architectural interest in the literary matter in either the *Century* or *Harper* this month. The illustrations by Mr. Pennell to a paper on the Norfolk Broads, in the *Century*, may be mentioned as of exceptional beauty as examples of book illustration.

In the *Atlantic Monthly* Mr. Peabody continues his interesting series of papers on "An Architect's Vacation," the present one (the third of the series), giving the author's remarks on Venice.

In *Scribner* Mr. H. C. Banner gives an illustrated article on "American Posters" (pictorial advertisements) past and present, with a number of illustrations; the subjects of French and English posters having been previously treated and illustrated in the same magazine. The chronologically progressive illustrations are worth looking at, as they furnish an interesting example of the development of what may now be called a special type of art, from the confused and ill-designed pictorial posters of the earlier days, when the object was merely to make something sensational with little regard to decorative effect, to the examples of the present day, in which the aim is to set forth a leading idea in a conventionalised and decorative manner, generally by means of a single carefully-designed figure with symbolical accessories. When, however, the writer claims that the examples of this latter class represent something purely American, we must differ from him absolutely. Their whole style is completely French, and would never have been achieved but for the influence of French examples; it may be patriotic, but it is absurd, to pretend otherwise. The paper on "American Wood Engravings" deals with the work of William Miller, a native of New York, but educated in Germany. Is it quite fair in that case to claim him as an "American" wood-engraver? An artist surely belongs, artistically, to the country which gave him his art training. Mr. Miller has worked chiefly at landscape engraving, and has aimed at his effects by avoiding fineness of line, and treating his subjects in the broadest manner possible. The example given of his work, "On the Coast—Moonlight," from a painting by Mr. Winslow Homer, does not impress us very favourably in regard to detail of execution, though the general pictorial effect is well conveyed.

In the *Nineteenth Century* Mr. Clements R. Markham writes an article on the need for an antarctic expedition, which may be useful as demonstrating to general readers the real scientific necessity of such an expedition, which is probably not generally understood. The most important object mentioned by Mr. Markham is the magnetic survey, which is of such consequence to navigation.

In the *Fortnightly* Mr. Alfred Austin writes a pleasant reflective article about Rome—"A Roman Reverie," which is worth reading. Looking at Rome from a poetic point of view, he naturally complains of its having become too much of an archæological museum. Speaking of the Forum, he observes—"Every scrap of excavated architecture, every shattered column, every bit of battered plinth and corroded entablature, has a name now, and it is all as spick-and-span as your own premises at home. At first you are aghast, and ask if it would not have been better, more reverential, more conformable both with art and archæology, to leave at least a few wrinkles on Rome's old and venerable face." But he admits that the history of the place has received notable elucidation, and that perhaps the first feeling of dismay was too hasty.

In the *Pall Mall Magazine* Mr. A. B. Simpson gives, in an article on "Bell Tones," some interesting and not generally known facts on the nature and acoustic relations of the complex tones produced by bells; facts which are of importance

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon.

in regard to obtaining a harmonious effect with a peal of bells, and should have the attention of those concerned in ordering new peals. In the same magazine Mr. Grant Allen continues his papers on "Evolution in Early Italian Art," dealing especially in this paper with the treatment of the Magi in pictures of the "Adoration." The paper appears to be the concluding one of the series. The writer's final remark is, that the Madonna and Child, in Early Italian Art, are types of a comparatively simple and rigid species; the Adoration of the Magi, on the other hand, is the best type of a very varied and mutable composition.

The *English Illustrated* contains an "interview" article on M. Caran d'Ache, whose portrait at the head of the article suggests the idea of a military man of the best type, rather than a caricature artist. There is a delightful humour in the four studies of "Bibliomania" given as an example of his work. Mr. Grant Allen—who seems to have taken seriously to the study of Italian painting, has a short article on Francia's "Madonna and Child with St. Anne" in the National Gallery, going into suggestions as to the reasons for the grouping of the picture, and the introduction of St. Sebastian. An article on "The Steeple Jack" by Mr. Wilfred Wemley, which professes to be the result of an interview with a professor of this business, may be interesting to architects, if it is to be accepted as genuine experience. Unfortunately, we have rather a scepticism about articles of this kind, which we are inclined to think are not infrequently made up by a literary imagination, though there is nothing in this one that may not be true.

Le Monde Moderne contains no less than three articles dealing with architecture and illustrations of buildings; one on Athens, one on Chartres, a long article very fully illustrated, and one on "La Grand-Place de Bruxelles." This latter contains not only illustrations of existing buildings, but several reproductions of old elevation drawings of the buildings as originally projected. An article on "Les Vins du Médoc" is interesting also in an architectural sense, as giving some description and illustration of the modes of storing the wine, and of some of the old buildings connected with the district; and an article on "Blanchissage Moderne du Linge" is also of interest to our readers, as it contains a full description of the processes in a great French laundry establishment, with plans of the building and views showing the arrangement of several of the departments. There are other articles of considerable interest not coming directly within our province, besides a fine little dramatic poem. *Le Monde Moderne* ought to have attention in this country, for it is one of the best and most interesting illustrated "monthlies" now published.

In the *Engineering Magazine* Mr. W. Stevenson considers the causes of the existence of "Uninhabitable Houses in City Slums"; and a translation is given of a valuable paper by Frederick Siemens, read at the eighth International Congress of Hygiene, on "Illuminating Gas for Heating Purposes."

The *Antiquary* contains articles on "Selmerton Old Church, Sussex," and on "Wayside Crosses on the Wolds, East Riding," by the Rev. E. Maule Cole; both illustrated from photographs. Selmerton is an interesting little church, with wooden columns. The crosses of East Riding are, unfortunately, for the most part only bases, but they are of interest nevertheless.

The *Reliquary and Illustrated Archæologist* (Quarterly) contains an article on "Some Hebridean Antiquities," by Mr. David Mac-Ritchie, and the first of a series on "Old Stone Crosses of Somersetshire," by Mr. Alexander Gordon.

The *Windsor Magazine* contains an illustrated account of the art collection at Nottingham Castle.

We have received the first number of *The Country House*, a monthly magazine containing a good deal of pleasant writing on rural subjects, intermixed with short stories by good writers, and one or two practical articles, such as "Making a Pasture," by Sir J. B. Lawes. The magazine is, moreover, well illustrated.

As the "Autumn Fashion Number" of a small periodical called *The Happy Home*, apparently a ladies' journal, has been sent to us, we may offer a word in season on a subject which is not strictly within our province. The first condition of happiness is health, and there can be nothing more injurious to health than the pinched-in dresses of the kind illustrated in an even exaggerated fashion in the pages of *The Happy Home*, which are, besides, as offensive to the eye of the artist as to that of the doctor. Let the periodical in question commence by illustrating and recommending a more healthy and less ugly style of dress—it will then have a better claim to its title.

THE LONDON COUNTY COUNCIL.

The weekly meeting of the London County Council was held on Tuesday, at the County Hall, Spring Gardens, Sir Arthur Arnold, the Chairman, presiding.

New Street from Holborn to the Strand.—Mr. Remnant presented a petition from the inhabitants of Holborn in favour of the construction of the new street from Holborn to the Strand, with modifications of the scheme proposed by the Improvements Committee.

The Improvements Committee recommended the Council to apply in the next Session of Parliament for powers to carry the scheme into effect, and the Council now proceeded to consider whether the Standing Orders limiting the period for considering applications to Parliament should be suspended.

Lieut.-Colonel Ford protested against the suspension of the Standing Orders, and expressed the hope that the matter would be allowed to take its proper course.

Mr. McKinnon Wood (Chairman of the Parliamentary Committee) also opposed the proposition, because he felt the Improvements Committee were asking the Parliamentary Committee to undertake work which it was not practicable for them to do in the time at their disposal. The committee had not brought up a report with all the details prepared; on the contrary, they had brought up a report which bore on the face of it obvious marks of haste and incompleteness.

Mr. Boulnois, M.P., reminded the members that this scheme had been before the Council for years, and he sincerely hoped that the Standing Orders would be suspended in order that they might at once proceed to a discussion of the main question.

Mr. Henry Clarke considered that the opposition to the recommendation would have been perfectly reasonable had this improvement come before the Council as a new improvement, but as a matter of fact the subject had been before the Council for six years.

Mr. W. M. Thompson said the urgency of the improvement had been admitted for years, and the Progressive Party, who had been in a majority in the Council for seven years, had done practically nothing in the matter. Now it was proposed by a side-wind to defeat a great project demanded by London, and necessary for London.

Sir John Hutton repudiated the charge that the Progressive Party had any desire to obstruct improvements. This scheme differed essentially from others that had been submitted, and he held that it could not be properly considered between now and the end of November.

After further discussion the Council divided, when there voted—

For the suspension of the Standing Orders	65
Against	35
Majority for	30

A majority of at least three-fourths of the members present, or a clear majority of the Council, being necessary for the suspension of a Standing Order, the recommendation of the Committee was defeated.

The Widening of Ludgate Hill.—The Improvements Committee submitted the following report:—

"We brought up to the Council on May 2, 1893, a report upon an application from the City Commissioners of Sewers for a contribution towards the cost of acquiring the premises Nos. 1, 3, 5, 7, and 9, Ludgate Hill, and No. 1, St. Paul's Churchyard, with a view to the completion of the widening of Ludgate Hill, and we recommended the Council to contribute one-half of the net cost of the improvement, such contribution not to exceed the sum of 44,960*l.* The Council, however, on May 16, 1893, passed the following resolution:—'That, considering that the ratepayers in the City are less heavily rated for the expenditure of the Council than the ratepayers in other parts of London, and that between the years 1856 and 1889 the City authorities received from the late Metropolitan Board of Works 572,794*l.* 3s. 9d. out of a total of 975,471*l.* 14s. 7d. contributed by that body towards the cost of local improvements (the annual charge resulting from which is still being borne by the whole of London), the Council is not prepared to contribute towards the cost of the City improvement referred to in the report.'

We have since had before us a letter from the City Commissioners of Sewers asking the Council to reconsider its decision. The Commissioners point out that the improvement in question is the completion of a work commenced many years ago and carried out in sections, the Metropolitan Board of Works having agreed, as each section was completed, to contribute one-half of the net cost. With reference to the statement in the Council's resolution, 'that the ratepayers in the City are less heavily rated for the expenditure of the Council than the ratepayers in other parts of London,' the Commissioners say that this is because the Corporation and Commissioners of Sewers have at great cost provided prisons, asylums, schools, coroners' court, artisans' dwellings, &c., to which the remainder of the Metropolis has contributed nothing, and that it would therefore be unjust for the City to be called upon to participate in these expenses for the rest of London unless the City's outlay were first reimbursed, in which case the ratepayers outside the City would find themselves considerable losers. The Commissioners further referring to the words 'that between the years 1856 and 1889 the City authorities received from the late Metropolitan Board of Works 572,794*l.* 3s. 9d. out of a total of 975,471*l.* 14s. 7d., contributed by that body towards the cost of local improvements,' contend that during that period the Commissioners of Sewers expended on improvements no less a sum than 2,825,394*l.*, being many times more than the whole expenditure of all the other local authorities of London for the same purpose, and that, whereas the outlay in other parts of the metropolis was only twice as much as the Metropolitan Board contributed, that of the City was five times as much. The Commissioners also hold that the City being the oldest part of London, and its streets the narrowest, improvements in the City have been more imperatively required, and that all London benefits by the centre being made more accessible, which cannot be said in regard to any of the outlying districts. They also point out that the City of London, by reason of its high assessment, contributes about one-eighth of the whole expenditure of the Council upon improvements in London, from many of which the citizens derive no benefit; and the Commissioners express the opinion that it will be hard if, after helping all the rest of London, they are to be left unaided in carrying out City improvements, which are needed, not so much in their own interest, as in the interests of the whole of London. For these reasons the Commissioners ask for a reconsideration of their application that the citizens may be assisted in carrying out the great improvement in question.

After carefully reconsidering the whole question, we are still of opinion that the widening of Ludgate Hill is a county improvement of such a nature as to justify the Council in contributing to the cost. In our former report upon the subject we stated that 'in accordance with the Council's resolution of November 26, 1889, the application of the Commissioners had been made to and considered by us in exactly the same manner as applications for contributions to improvements in other parts of London. It must be admitted that the widening of Ludgate Hill has been necessitated not by local but by general through traffic going to and from all parts of the county, the street in question being one of the principal thoroughfares between the east and west of London. We are of opinion that the necessity and importance of the improvement, and the fact that it is one in which the inhabitants of London are interested, thoroughly justify us in recommending the Council to accede to the application of the Commissioners.' To these opinions we adhere, and, as the Commissioners have thoroughly complied with the rules of the Council governing applications for contributions towards the cost of improvements, and as we are satisfied that the estimated cost (89,920*l.*) is fair and reasonable, we again recommend—

'That, subject to an estimate being submitted to the Council by the Finance Committee as required by the statute, the Council do contribute, on the usual conditions, one-half of the net cost of widening Ludgate-hill at Nos. 1, 3, 5, 7, and 9, and at No. 1, St. Paul's-churchyard, as proposed by the City Commissioners of Sewers, such contribution not to exceed the sum of 44,960*l.*'"

The consideration of the report was adjourned for a week, in accordance with the standing order of the Council.

Government Buildings and the Building Act.—The Parliamentary Committee reported that a representation had been made to the Government calling attention to the exemption from the London Building Act of any building, structure, or work vested in and in the occupation of any department of the Government or of the Metropolitan Police, and pointing out the extreme desirability of bringing public buildings generally into compliance with the requirements of the Act as to lines of frontage, as well as with the general requirements of the law as regards drains and sanitary conditions, in the same way as buildings belonging to private owners. In reply, the First Commissioner of Works, to whose department the letter was addressed, had informed the Committee that he had consulted the Treasury on the subject, and he pointed out that the Act of 1894 left the question one of administrative discretion, and that cases might arise when it might be essential that a public building should not conform strictly to a prescribed line of frontage. The First Commissioner added that, in applying this principle, the Commissioners of Works, while unable to waive the exemption granted by statute, would endeavour to exercise it with discretion and in the most reasonable spirit. The Committee stated that they were still strongly of opinion that in the public interest the exemption should be removed, and that an interview with the First Commissioner might perhaps enable them to convince him of the desirableness of the change. They, therefore, asked the Council to authorise them to request the First Commissioner of H.M. Works, to receive a deputation on the subject, the deputation to consist of the Chairman and two members of the Building Act Committee, in addition to members of the Parliamentary Committee.

Dr. Longstaff asked that the recommendation should be referred back with the view to its being considered by the Building Act Committee.

Mr. McKinnon Wood (Chairman of the Parliamentary Committee) acquiesced.

Mr. John Burns hoped this course would only be adopted on the understanding that the main principle involved was not departed from. The Government, in his opinion, ought not to be allowed to depart from those regulations that the Council and the Local Authorities imposed upon private individuals.

Dr. Longstaff remarked that the Council was equally with the Government exempted from the conditions as to lines of frontage.

Boundary-street Improvement Scheme, &c.—The Public Health and Housing Committee reported as follows :—

"In pursuance of the authority given by the Council on July 23 and 30 last, we have opened the tenders received for the erection of the working-class dwellings on blocks B, G, H, and I, section B of the Boundary-street scheme, and for the erection of Idenden Cottages, East Greenwich, under the Blackwall Tunnel scheme. The tenders were as follows—

Boundary-street.

Block B—G. E. Todd	£10,100	0	0
Holloway Bros.	10,977	0	0
W. Shurmur	12,000	0	0
Block G—Holloway Bros.	3,956	0	0
J. Jarvis & Sons	4,063	0	0
W. Shurmur	4,600	0	0
Block H—Holloway Bros.	6,936	0	0
T. H. Kingerlee	7,409	7	9
W. Fortescue	7,426	0	0
D. Charteris	8,010	0	0
Block I—G. E. Todd	6,990	0	0
Holloway Bros.	7,817	0	0
W. Shurmur	8,500	0	0

Idenden Cottages.

Holloway Bros.	£13,803	0	0
Joseph Potter	14,921	0	0
Kirk & Randall	15,500	0	0
G. E. Wallis & Sons	16,372	0	0
Richard Heath Walker	26,054	5	2

We have accepted the tenders of Mr. G. E. Todd for the erection of Blocks B and I, and the tenders of Messrs. Holloway Bros. for blocks G and H and for Idenden Cottages, and the works are now in progress. We submit a plan (which will be hung up in the Council chamber) showing the progress of the works on the Boundary-street area. Dwellings are already erected on section A, and are now fully occupied—works are in progress on blocks A, B, G, H, and I, on section B, and the buildings are commenced on a portion of section E.

We considered it desirable that a clerk of works should be employed in connexion with the dwellings on the portion of section E of the Boundary-street area, which are being erected under the supervision of Mr. Rowland Plumbe. The Council on our recommendation adopted this course with respect to other buildings, and we have therefore instructed Mr. Plumbe to appoint Mr. W. Finney, at the wages of 3*l.* 3s. per week. We recommend—

'That the course taken be approved.'

We report for the information of the Council that the Home Secretary has signified his approval of the Council itself erecting dwellings for persons of the working class on the remaining sections of the area, viz., sections C, D, and E. We have instructed the architect to submit plans of the dwellings for sections C and D, and the remaining portion of section E yet to be dealt with, as soon as possible. The Act directs that the scheme shall be advertised for three consecutive weeks during the months of September, October, or November, and for this reason we did not report to the Council earlier in the year."

Mr. Boulnois, M.P., asked if the tenders were opened by the Committee, or by Mr. Bruce, as Chairman.

Mr. Bruce replied that the tenders were opened by a Sub-Committee appointed by the Committee.

Mr. Boulnois said he had implicit confidence in the Chairman of the Public Health Committee, but he did not think the duty of opening tenders should be delegated to any Sub-Committee. He wished, however, to call attention to the figures given in the report. The Works Department, when the Architect's estimates were sent to them, said they could not carry out the work at the amounts stated, and yet in nearly every case the contractors were able to do the work at a little above or a little below the estimates of the Architect.

Mr. Burns asked whether the Committee felt justified in proceeding with the other blocks after their experience of the unsightly character of the block already erected.

Mr. Bruce said there was general disappointment at the result, but the respective drawings were submitted to the inspection of the Council at the outset, and no remarks were made upon them.

The Committee's recommendation was agreed to.

Millbank Prison Site.—The following report was submitted by the Public Health and Housing Committee :—

"It will be remembered that the Council agreed to purchase about 10 acres from the Government for the purpose of housing persons of the working class, under Part III. of the Housing Act. One of the requirements of this part of the Act is that the Council shall itself erect dwellings either through a contractor or otherwise. It is of great importance that work should be commenced at once. The final sale to the Council is not yet fully completed, but it is understood that we have permission to commence laying out the area. The Council, on July 2 last, amended and referred back to us the following recommendation in our Report on the question of obtaining plans for the laying out of and the erection of buildings on the site—That the Committee be authorised to employ a specially qualified architect or architects to design the laying-out of the Millbank Prison site, and to prepare the plans of the buildings to be erected thereon. Having again given careful consideration to this matter, we are of opinion that the views of the Council will best be met by the Council entrusting the laying-out of the site to its own Architect, and authorising us to employ an architect or architects to design the buildings should it appear to us desirable to do so.

We recommend—

'That the Council's Architect be instructed to design the laying-out of the Millbank Prison site, and that the Committee be authorised, if it should think fit, to engage the services of an outside architect or architects for such of the buildings as the Council shall determine to erect upon the site.'"

Lieut.-Col. Ford remarked that the Committee proposed to leave to the Council's Architect the laying out of the site, but it had no confidence in him to do the work. This, he considered, was a great slur upon Mr. Blashill, who was a thoroughly qualified architect, and one of their most capable officers.

Colonel Rotton moved, as an amendment, that the matter be referred back. He said the proposal originally was that the Council should employ an outside architect for the laying out of the site, and the erection of the buildings; now the Committee said they did not want an outside architect to lay out the site, their own Architect could do that, but they wanted an outside architect to carry out the erection of the buildings. This was a very small concession, and undoubtedly it was a slur on Mr. Blashill, who, as the Architect of the Council, should superintend all their work.

Mr. Beachcroft stated that the recommendation was merely in the nature of a compromise. Mr. Blashill was overworked, and was not able to carry out these large undertakings so far as the superstructure was concerned at Millbank, which meant an expenditure of no less than 250,000*l.* He contended that there was no slur cast on Mr. Blashill in the recommendation.

After some further discussion, the amendment was rejected and the recommendation of the Committee approved, the words "to submit the name or names" being substituted for the words "to engage the services."

Water Companies' Regulations.—On October 9, 1894, the Public Health and Housing Committee reported to the Council the result of their correspondence with the London water companies with regard to the alterations which the Council had asked them to make in their regulations under the Metropolis Water Act, 1871, and, in view of the refusal of the companies to make the most important alteration suggested, viz., to increase the maximum capacity of water-closet flushing cisterns from two to three gallons, and of their failure to alter the regulations in the other points suggested, the Council decided to ask the Local Government Board to appoint a person of engineering knowledge and experience to report to them on the subject, as provided for in Section 19 of the Act. The Committee had now to report that the Board had appointed Colonel Ducat, R.A., one of its engineering inspectors, to hold an inquiry, which will take place on October 31. As it might be necessary to retain counsel, to obtain the evidence of experts, and otherwise to incur expenditure in supporting the Council's views on this important question at the inquiry, the Committee recommended—

"That, subject to an estimate being submitted to the Council by the Finance Committee as required by the statute, the Committee be authorised to expend a sum not exceeding 250*l.* in connexion with the inquiry."

The recommendation was approved.

Sanitary Inspectors.—The Public Health and Housing Committee reported that the Local Government Board had sanctioned the following appointments and re-appointments of Sanitary Inspectors, viz. :—Appointments of Messrs. Ensor, Bartlett, and Green in Clerkenwell; Mr. P. Shelley in Greenwich; Messrs. Bagshaw, Irving, Metcalf, and Mernagh in Islington; Miss Rose E. Squire in Kensington; Mr. J. F. Charlesworth in Lewisham; and Messrs. Biorn, Golds, and Potter in Paddington. Reappointments of Messrs. Freeman and Bennett in Holborn; Mr. H. F. Bridel in Kensington; and Mr. F. E. Butcher in Lewisham. One-half of the salaries of these officers is payable by the Council in accordance with the provisions of the Public Health (London) Act, 1891.

Churchway (Somers Town) Area.—The consideration of the scheme for dealing with the Churchway (Somers Town) area was postponed. The scheme deals with the houses in Churchway, Wellesley-street, Elizabeth-court, and York-buildings, and provides for the formation of a 40-ft. road along the existing line of Churchway, widening on its western side from Grafton-place to Drummond-street, and thereby converting three *cul-de-sacs*, viz., Grafton-place, Wellesley-street, and Lancing-street, into thoroughfares. The estimated cost of acquiring the properties is 52,000*l.* It is anticipated that there will be a recoupment amounting to 6,800*l.*, leaving the net cost of property 45,200*l.* The paving works are estimated to cost 6,450*l.*, so that the total net cost of the scheme is estimated at 51,650*l.* By the arrangement made with Lady Henry Somerset the Council will be relieved of all expenses in respect of her property dealt with by the scheme. The estimated gain to the Council effected by the co-operation of Lady Henry Somerset is 12,500*l.*, which reduces the total cost of the scheme to the Council to 39,150*l.* net. The total number of persons who will be displaced is 1,086, and accommodation for about 568 persons can be provided on the cleared area—viz., 348 on the east side of Churchway, and 220 on the west side.

Strand Insanitary Area.—The Public Health and Housing Committee called attention to the insanitary condition of an area lying immediately north of the Strand, adjoining Clare Market and the southern end of Drury-lane, and expressed the opinion that the narrowness, closeness, and bad arrangement, and bad condition of the houses, courts, and alleys within the area, and the want of light, air, and ventilation were injurious to the health of the inhabitants, and that the evils connected with these houses, courts, or alleys, and the sanitary defects in this area could not be effectually remedied otherwise than by an improvement scheme. The Council's officers had prepared a scheme, the details of which are as follows :—

"It is proposed to include in the scheme all the properties within the represented area, and also the property in Kemble-street and at the corner of Holles-street and Stanhope-street which is not referred to in the representation of the Medical Officer of the district, but which is included to enable the Council to improve the rehousing area and close the whole of Holles-street, and so obtain a much better building site than otherwise would be possible. In this, as in all schemes, the difficult question of re-housing a portion at least of the persons displaced by the scheme has to be faced; and to this question we have given very careful consideration. The experience which we have gained of late years shows that but a very small proportion of the actual persons displaced from insanitary courts and alleys by housing schemes can be induced to avail themselves of the accommodation supplied for them in the new buildings erected for that purpose. This arises from the fact that the areas cleared in housing schemes consist of the worst form of slums, snd that people living under these conditions are not at once prepared to accept the more stringent regulations required in improved sanitary dwellings. There are always, however, plenty of persons, living under somewhat better conditions than those of the slums in question, who eagerly appreciate the sanitary improvements to be found in dwellings provided by the Council, and these persons, by removing to the new dwellings, make room in their turn for those displaced from the courts and alleys which have been destroyed. On the land which the Council is about to acquire at Millbank, dwellings capable of accommodating more than four thousand persons can be erected. It will be remembered that one of the considerations which induced the Council to undertake the purchase of the Millbank prison site was that the Home Secretary agreed that dwelling-houses built thereon should be considered as accommodation supplied for persons displaced by any scheme within two miles distance. The Strand area in question falls within this limit. The total number of persons to be displaced is 3,038. Of this number there is a certain proportion, such as porters at Covent-garden market, persons employed at theatres, &c., whose occupations necessitate their living in the vicinity. For this class of persons we propose to make provision to the extent of about 500 on the area, and in this connexion it is proposed to widen Drury-lane on its eastern side to 40 ft. so far as the property taken extends. With regard to the remainder (about 2,538) it is proposed to supply accommodation for one-half (about 1,269) on the Millbank prison site, in accordance with the permission of the Home Secretary.

The estimate of the cost of the scheme is as follows :—

Net cost of property	£214,250
Estimated cost of paving, &c., works	2,250
Total net cost	£216,500.'"

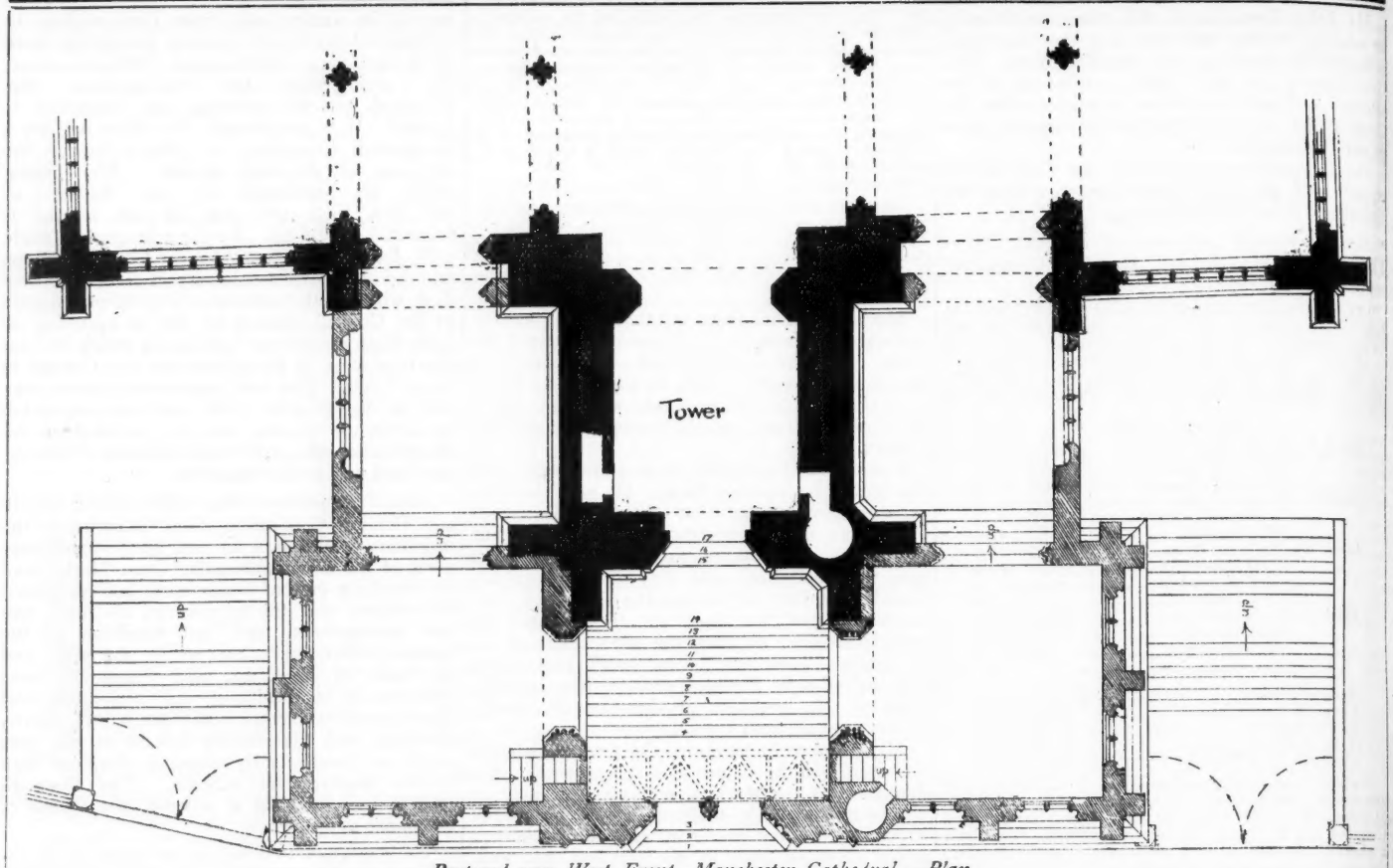
The consideration of the subject was adjourned for a week.

After the transaction of other business, the Council adjourned.

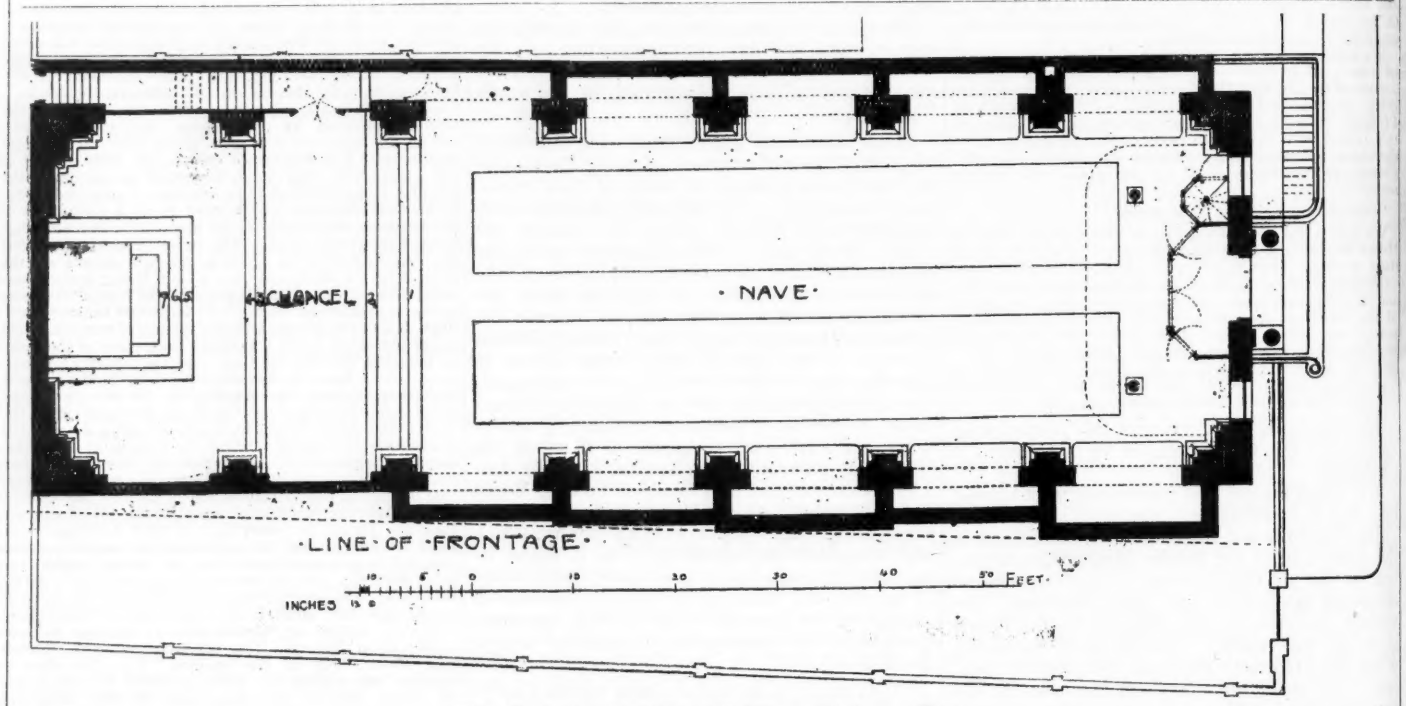
COMPETITIONS.

HOSPITAL FOR BOWNESS AND WINDERMERE DISTRICT.—The united committee of the Bowness and Windermere District Councils have selected the plans sent in in open competition by Mr. Robert Walker, architect of Windermere and Lancaster, for a joint hospital for the district.

DERBY.—The Special Purposes Committee of St. Thomas' Church, Derby, have selected the design of Mr. F. W. Dixon, of Guardian Buildings, Manchester, and Union-street, Oldham, submitted in open competition, for proposed new



Proposed new West Front, Manchester Cathedral.—Plan.



Church of the Most Holy Redeemer, Chelsea.—Plan.

Parish Hall and Sunday-school. The selected design shows a Late Gothic treatment in red brick and terra-cotta, with a rich tracery window in terra-cotta towards the main road. The coping to gables, &c., will be in Matlock stone; whilst the inside joiners' work will be in selected pitch-pine, and the windows glazed with leaded lights. A combined system of heating and ventilation will be adopted upon a low-pressure basis. A caretaker's house is also included in the scheme.

Illustrations.

PROPOSED WEST FRONT, MANCHESTER CATHEDRAL.

THIS design, by Mr. Basil Champneys, the drawing of which was exhibited at the last Royal Academy, has arisen in part out of the changes which it is proposed to make in the treatment of the site of Manchester Cathedral. The roadway in front of the cathedral, which is at present oblique in regard to the building, is to be widened and its boundary run parallel to the west front of the cathedral. It has been proposed at the same time to lay out the cathedral precinct with grass lawns and specially laid-out walks. The proposed front would serve to bring the line of the building up to the street, making a great entrance porch immediately accessible, and at the same time give greater breadth and importance to this portion of the building, substituting this wide elevation for the narrow tower.

The work is not yet carried out, but it seems probable that it will be.

CHURCH, UPPER CHEYNE ROW, CHELSEA.

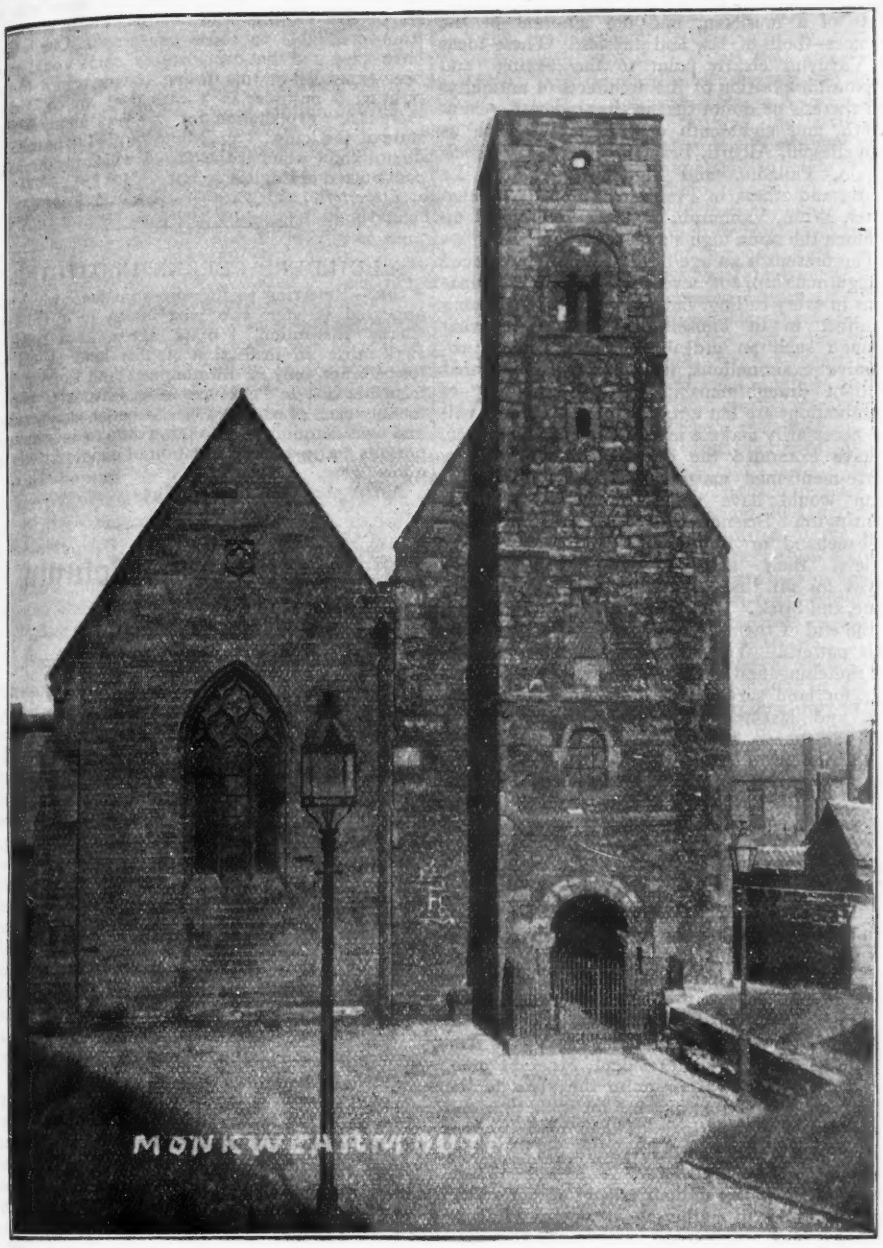
THE "Church of Our most Holy Redeemer," Upper Cheyne-row, Chelsea, is to be opened by Cardinal Vaughan on October 23. It has been built for the Very Rev. Canon C. Keens, by Messrs. Goddard, of Farnham and Dorking, from the designs and under the superintendence of Mr. Edward Goldie, architect, of London.

The foundation-stone was laid by the Cardinal on June 7, 1894.

The church is Italian in style, of an English type, somewhat after the manner of our City churches, and is 115 ft. long internally and 34 ft. wide across the nave; the height is 42 ft.; the width across the chapels is also 42 ft. This would have been greater but for the proposed widening of the side street. The material outside is red brick with Bath stone dressings, inside plaster with Bath stone plinths to the pilasters, the ceiling being coved and ribbed. The wood-block floor is laid by Messrs. Duffy, the heating done by Messrs. Grundy, and the electric lighting is by the Westminster Electric Installation Company. The roof is covered with lead. There is a gallery at the west end, with a balustrade in front and a spiral stair, all worked in kauri pine. The sacristy is under the chancel, a side stair leading to it; under the west end is the heating chamber. The drawing from which the illustration is taken was hung in the last Royal Academy exhibition.

ST. JAMES'S CHURCH, SPANISH PLACE.

THE church, which was erected from the designs of Messrs. Goldie, Child, & Goldie, as the result of an important competition h ld in the



Monkwearmouth Church. From a Photograph.
(See page 250.)

year 1885, has been before illustrated in our columns, but not from the points of view shown in Mr. Brewer's two sketches.

We gave a full review of the competition designs under date July 18, 1885, and a view of the exterior design in our issue of August 1 of the same year.

DESIGN FOR A LABOUR CHURCH.

This design, exhibited in the Royal Academy in 1894, seems to suggest a new idea in regard to church building; the provision of a plain and simply-treated building especially for artisans. This intention is emphasised by the provision of pedestals round the line of the boundary-wall for the statues of eminent socialists or champions of labour; an idea which will, we fear, seem rather unsuitable to most English people, as introduced in connexion with a church. The design, however, represents a new idea in church building, in more than one sense, and as such is worth attention.

ENGINEERING SOCIETIES.

The Civil and Mechanical Engineers' Society.—On October 2 the members of this Society visited the new and old works of the East London Water Company at Walthamstow. The existing reservoirs belonging to the company cover an area of 220 acres, and the line of shore is ten miles in length. The new works of the company under their Act of 1894 consist of—1. The construction of two large reservoirs. 2. The raising of the old racecourse reservoir 9 ft. in height, so as to enable the depth of the water to be increased to 20 ft.; the water area will then equal sixty-five acres. 3. The construction of a new road; and 4. The construction of filter-beds and high-service covered reservoirs. The two new reservoirs are being constructed by Messrs. John Aird & Sons, and the water-area of these will equal eighty acres; the depth of water in them will be about 20 ft. They will be connected with one another by means of tunnels, and the flow of water between them will be regulated by valves. The additions to the Racecourse Reservoir are being carried out by Messrs. Kirk & Randall, and this latter work will be completed in about a month's time. The contractors will have executed the work two months under their contract time. There are three filter-beds at this station, also a deep well into the chalk, the water from which is lifted by a differential pumping engine. A new triple expansion pumping engine and new centrifugal pump and engine will be erected here, the latter pump being capable of lifting 50,000,000 gallons a day. Other works are designed and will be carried out as early as possible. Mr. Randall, one of the contractors, Mr. Taylor, who represented the engineer, Mr. W. B. Bryan (who was engaged at the Hackney Inquiry), and Mr. McPherson, the manager of Messrs. John Aird & Sons, kindly took the members over the works and described the same. A locomotive and specially fitted-up trucks were placed at the disposal of the members by the contractors.

The Incorporated Association of Municipal and County Engineers.—The twentieth voluntary pass examination of candidates for the offices of Municipal Engineers and Surveyors to District Councils carried out by this Association was held at the Town Hall, Manchester, on Friday and Saturday, the 4th and 5th inst. Thirteen candidates entered themselves for the examination, the written portion of which was taken on the first day. The greater part of the second day was occupied with the *viva voce* portion of the examination. The examiners were:—(i.) For Engineering as Applied to Municipal Work, T. De Courcy Meade, M.Inst.C.E., Past President. (ii.) For Building Construction, E. Pritchard, M.Inst.C.E., Past President. (iii.) For Sanitary Science, J. Lemon, M.Inst.C.E., Past President. (iv.) For Public Health Law, J. T. Eayrs, M.Inst.C.E., Past President.

Society of Engineers.—At a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on Monday, October 7, 1895, Mr. Wm. George Peirce, President, in the chair, a paper was read by Mr. Reginald E. Middleton, M.Inst.C.E., on "The Relative Value of Percolation Gauges." The object of the author of this paper was to examine into the relative value of percolation gauges situated at Nash Mills, Lea Bridge, and Rothamsted, as regards the records of each, their reliability when compared with other sources of information, and the evidence which is afforded as to the quantity of rain water which may be assumed to pass into the underground reservoirs which supply wells and rivers. It was shown that there are remarkable discrepancies between the records of the gauges themselves, and that the percentage of rainfall which percolates does not appear to be consistent throughout, although the water percolating follows the records of rainfall more closely than is generally supposed to be the case. The author next endeavoured to produce evidence from two other sources, namely, from the varying levels of the water in two wells, and from the gaugings of the rivers Thames and Lea, confirmatory of the general conclusions arrived at from the records of the different percolation gauges. The results obtained have been tabulated, and, although they do not agree between themselves entirely, nor with the records obtained from percolation gauges, they yet afford some evidence generally confirmatory of the results recorded by those gauges, and the differences are probably due rather to a failure in obtaining a proper ratio of discharge in the one case and to a general rather than a particular consideration of the circumstances in the other, than to any inaccuracy in the method adopted. In the case of the rivers, the evidence obtained appears to be of value, especially as indicating that unless the amount of water which percolates into the underground reservoirs has been very largely over-estimated, the rivers do not discharge the whole or anything like the whole of the water collected in the underground reservoirs, but that a very large volume passes away through some other channel, and is available for purposes of water supply. This volume, in the case of the river Lea, amounts to some 75,000,000 gallons, and in the case of the river Thames to the enormous quantity of 697,000,000 gallons daily, To illustrate the discrepancies, it may be sufficient to give one or two instances. Thus, if the years 1860 to 1866 of the records kept at Nash Mills and Lea Bridge be compared with those from 1866 to 1873, it is found that the Nash Mills gauge passed, during the former period, 23 per cent. of the rainfall, and that at Lea Bridge 29 per cent. was passed, while in the second period the Nash Mills gauge passed 19 per cent. and the Lea Bridge gauge 29 per cent. If the two gauges at Lea Bridge and Old Ford, which are placed only about two and-a-half miles from each other, and are under the same management, be compared, it is found that the percentage of rain passed by that at Lea Bridge between the years 1875 and 1890 is 30·4 per cent., while at Old Ford it is only 25·2 per cent., and in many years the difference is far greater. Similar results are arrived at by an examination of the other gauges.

MONKWEARMOUTH CHURCH.

This general view of Monkwearmouth Church as now existing furnishes an additional illustration to Professor Baldwin Brown's second paper on Pre-Conquest architecture, which will be found on pages 250-252 in this issue.

Carpenters' Company's Trades' Training School.—The classes at this school, which include almost all trades connected with building, such as classes for masons, tilers and bricklayers, carpenters and joiners, plasterers, plumbers, painters and decorators, wood-carvers, and wheelwrights, re-opened in the second week in September, with about 130 students. The President of the Institute of Architects, Mr. F. C. Penrose, has consented to visit the schools early in November, and to address the students.

SHEFFIELD SOCIETY OF ARCHITECTS:

PRESIDENT'S ADDRESS.

On Wednesday evening Mr. Hadfield, the President of the "Sheffield Society of Architects and Surveyors," gave his opening address, in the course of which he addressed the following remarks specially to the younger members present:—

"The word Architect, derived from the Greek, signifies a chief artificer or constructor. In the records of early Christian times, and notably in those of the close of the twelfth to the sixteenth century, the architect is generally styled 'the Master,' 'Magister operum,' or Master Mason. I may instance Anthemius and Isidorus, both architects or engineers employed by the Emperor Justinian during the erection of the great church of St. Sophia, at Constantinople, in the sixth century.

Master Wilars d'Honecort, a facsimile of whose album or sketch-book is exhibited to-night, was another of these men. The original MS., of thirteenth-century date, is preserved in the Bibliothèque Nationale, Paris, nod. S. G. Latin, 1104, where I examined it some years ago. He appears to have been extensively employed in various parts of France, and even Hungary, and informs his readers that he had travelled in many lands, and writes, 'Wilars de Honecort salutes you, and implores all who labour at the different kinds of work contained in this book to pray for his soul, and hold him in remembrance. For in this book may be found good help to the knowledge of the great power of masonry, and of devices of carpentry. It also shows the power of the art of delineation—the outlines being regulated and taught in accordance with geometry.' Master William of Sens, a Frenchman, who was retained by the monks of Canterbury to rebuild the choir of their Cathedral after the disastrous fire in 1174, and his successor, Master William the Englishman, may also be instanced; and in France, during the thirteenth century, Robert de Luzarches, and after him Thomas de Cormont and his son Regnault, were engaged at the Cathedral of Amiens, and Pierre de Montreuil at the Sainte Chapelle and other thirteenth-century churches in Paris. In the Cathedral of Rheims, on an incised slab, is the effigy of Hugues Libergier, with his measuring-rod and compass, and an inscription recording the erection of the church under his direction in the year 1239. These men, all laymen, were practically in much the same position as the modern resident engineer.

France from the days of Charlemagne to our own, has been a great centre of the building art, and most of the old trade customs are yet in force; the architect there being the chief director and thinker in building operations, is closely in touch with the artists and craftsmen engaged; and by his position keeps at arms length the self-styled specialist, who in the United States and this country, is allowed, mainly by the apathy or want of knowledge of some architects, to elbow them out of their legitimate sphere of authority.

Mr. W. H. White, the accomplished Secretary of the Royal Institute of British Architects, who is intimately acquainted with French building customs, pointed out, in a lecture on 'The Architect and his Artists,' which he delivered at one of the earlier meetings of this Society, that 'in Paris and France generally the architect is the sole and supreme master of the work, and his relations with the master-workmen are constant and direct. He makes his contracts, not with one capitalist' (who may be no craftsman), 'but with a dozen or more master-tradesmen, who each work under his direction, and who look to him only for orders to fix materials, and assist each other at the several stages of the work. This fact renders it essential for an architect in France to be a constant visitor on the works, with the superintendence of which he is entrusted.'

'The visit,' he continues, 'of a French architect to a building in course of erection under his orders, is a most characteristic ceremony, and one not confined to the largest works. He is followed throughout by the masters of each trade engaged, by his assistant architect, who probably resides at the works, and by the principal foreman. A French architect does not think any detail of his building too small for attention, and modern French work, unlike a good deal of contemporary English work, bears comparatively few marks of details culled from trade catalogues. It is artistic and thorough all through, from basement to roof-tree.

Vitruvius lays down 'that an architect should be ingenious and apt in the acquisition of knowledge. He should be a good writer, a skilful draughtsman, versed in geometry and optics, expert at figures, acquainted with history, somewhat of a musician, and not ignorant of the sciences—both of law and physics.' These ideas of Vitruvius clearly point to the exalted and responsible position of the architects of antiquity, and there is no doubt that in the sixteenth, seventeenth, and eighteenth centuries, men such as Brunelleschi, Alberti, Bramante, Peruzzi, Michelangelo, Palladio, and Vignola, in Italy; Le Pautre and others in France; and our own Inigo Jones, Wren, Vanburgh, and the like, lived up to much the same high standard.

The present is an age of marvellously advanced draughtmanship, and severe competitive examinations in every calling, but while urging the young architect to fit himself by study for passing through such an ordeal as the R.I.B.A. progressive examinations, let me remind him that brilliant draughtmanship and the passing of examinations are but a means to an end, and will not necessarily make a man into a good architect. I have examined the drawings of some of the above-mentioned masters, and doubt if any of them would have passed muster at a South Kensington Science and Art Examination in Freehand or Building Construction; nevertheless, their authors immortalized themselves for all time by their works in marble, stone, and brick. They were workers and students to the end of their lives, and I hold them up as your pattern. You have well-organized classes for sketching and the measurement of old buildings, for land surveying, for historical study; the first and last-named under a leader, whose achievement in measuring and delineating the north transept of Lincoln Cathedral, brought him the well-earned and coveted-distinction of the R.I.B.A. silver medal some two years ago. Let me suggest also for your consideration a work that ought to be no longer delayed, *i.e.*, that of carefully drawing and measuring old local buildings, and any architectural detail of interest they may happen to contain, with a view of issuing the drawings in book form to subscribers. This has been successfully done elsewhere. The German societies of architects make it one of their chief duties, and issue complete records of the buildings in their own immediate district. The Sheffield Guild of Arts and Crafts, through its President, Mr. C. Green, have already drawn attention in the press to the lamentable destruction, that has for some time and must necessarily continue to take place in this city, of much that is worthy of record. Let us join hands with them before it is too late. There is now, at the eleventh hour, plenty of material to work on, and in gathering it in you will be garnering rich stores of old decorative and building types, and at the same time cultivate your designing faculties.

I should like to see more use made by young architects of the admirable classes for the study of geometry, strengths and testing of materials, carpentry, and the like, at the Sheffield Technical School, where practical knowledge may be gained from practical men. This kind of training, and the inspection, setting out, and study of building work, whether in the builder's workshop or on the actual building, is invaluable."

Correspondence.

To the Editor of The Builder.

THE ADMIRALTY SCREEN.

Sir,—With regard to the suggestion you have made (page 199) that the additional coach entrances were made by Thomas Papworth, may I say that Mr. Geo. Ledwell Taylor, in his autobiography (vol. i., fol. 166), claims credit for this alteration of the screen at the urgent instance of the Duke of Clarence, and tells of his perplexity in getting the work done without interference from Mr. Croker, the First Secretary of the Board, who sought to put it in the hands of Mr. Smirke.

Mr. Taylor gives a sketch of the façade, showing the third column in each bay removed, and a *cast-iron* lintel replacing the stone entablature. Mr. Taylor was appointed Surveyor of Buildings in 1824, and the alteration was made in 1827.

E. W. Hudson.

THE BISHOP'S THRONE AT NORWICH.

Sir,—In the course of inspecting Norwich Cathedral this week I naturally paid attention to the new Bishop's Throne, designed by Mr. Pearson, R.A., and only unveiled by the Prince of Wales a month or two ago. I was astonished to find that the joints of the woodwork have already begun to go in many places, and so prominent are some of the gaps so caused that they are quite visible when sitting in the stalls some feet away. I do not know who is responsible for this piece of work, but it seems far from creditable to those concerned. One would have supposed that considerable pains would have been expended on this throne, having regard to the position it occupies in a cathedral church, and if there is any explanation for the very unsatisfactory state of the joints, I shall be very glad to hear it. I do not know whether the oak of which the throne is constructed is English or not.

Lowestoft. John E. Freeman.

"A BUILDERS' CLERKS' INSTITUTION."

Sir,—Referring to the correspondence which has appeared in your two past issues *re* a Builders' Clerks' Institution, I quite agree, as a builders' clerk, that an institution of this kind should be formed, not only for Birmingham and London, but from Berwick to Penzance, to endeavour to obtain for this class of educated labour better remuneration and consideration, and to put a stop to incompetent persons occupying the situation of builders' clerks at a low figure. R. H. B.

Nottingham, October 7, 1895.

The Student's Column.

METALS USED IN BUILDING.—XV.

ALLOYS.—THE IRON GROUP (*continued*).

IRON AND CARBON.—Iron possesses great affinity for carbon, and, practically, all carefully-manufactured iron contains it, though it may be to a very small extent. It unites with iron in various proportions, up to close upon 5 per cent., forming different varieties of cast-iron and steel. Fluid iron containing more than that proportion of carbon will, on solidifying, have the excess (or a little lower) separated in the form of flakes or scales of carbon more or less crystallised. The principal distinction between cast-iron, steel, and malleable iron is in the proportion of carbon in combination or alloyed with the iron. For iron to take up carbon it is not essential that the metal shall be in a fluid condition; a bar may be highly heated in presence of carbon, and may thus be converted into a species of steel, the operation being termed "cementation."

The greatest proportion of carbon that may be permitted in malleable iron without diminishing its malleability or softness is about ·15 per cent., the precise amount resting with the quality of raw iron used. In a certain sense steel may be regarded as iron having from ·16 to 1·8 per cent. of carbon alloyed with it. The more carbon present, other things being equal, the harder the steel becomes. It should not be forgotten, however, that there are great practical difficulties in the way of studying the compounds of iron with various substances. Our present information on that head is almost entirely derived from the observation of the effect of varying each element when several are present. All we know is, that in presence of certain proportions of one or more elements, a greater or less addition of another element produces specific results. In time this will, of course, be altered when the subject is studied more from the scientific and less from the commercial standpoint. The relation of carbon to manganese in the preparation of iron and steel has already been alluded to.

Iron and Silicon.—The quantity of silicon present in iron before it produces any appreciable effect depends almost entirely on the proportion of carbon present. Ordinary ferrosilicon contains about 10 per cent. silicon and 1·5 to 2·5 per cent. carbon. With about 4 per cent. silicon, carbon in iron is induced, when present in sufficient quantity, to become graphitic. With cast-iron Turner has shown that a maximum crushing strength may be obtained with about 1 per cent. silicon; maximum tensile strength with 2 per cent.; and maximum transverse strength with about 1·4 per cent.; that is, when the cast iron has only about 2 per cent. carbon.

Silicon being fatal to welding, it is, naturally, kept out of wrought-iron as much as possible, and there is a general consensus of opinion amongst metallurgists that the purer the iron the better the weld. Improvements in welding, by electrical means, may, however, lead to a slight modification of this statement, but in any case the principle remains unaffected.

Iron and Tungsten.—The union of iron with tungsten forms a highly-interesting study,—some very valuable alloys result; but as the metal is not materially used in the building industries we do not propose to deal with the subject at any length. The principal value of

tungsten in steel is for the manufacture of cutting tools; the commonest form of ferrotungsten is known in England as "Mushet's special steel." Some very remarkable properties are brought out in the union of these two substances. For instance, when more than 3 per cent. of tungsten is present, instead of becoming hardened by heating and plunging in water, as is ordinary steel, it is in reality softened. Certain proportions yield a metal possessing valuable electrical properties. That ferrotungsten forges with difficulty may be gathered from the circumstance that the melting-point and specific gravity of tungsten are very high, and the alloy is therefore not easily induced to form. Added to steel, tungsten renders that metal very brittle.

Iron and Chromium.—The application of this alloy has not hitherto been very extensive; a small quantity of chromium in steel produces a fine texture, but if used in considerable proportions it leads to brittleness, and its usual companion, hardness. Chromium is very difficult to melt, but it has a strong affinity for iron, and appears to form alloys in all proportions. Mr. A. Vosmaer, who has made a detailed study of the compounds of chromium, remarks * that, unlike ferromanganese, the crystals of which are developed in the breadth as plates, ferrochrome shows long white needles or very small plates, and the higher the carbon the more needles are visible on fracture, and the richer in chromium the smaller the size of the needles. The carbon seems to be altogether in the combined state, which may be due partly to the fact that chromium pig solidifies very rapidly. Perhaps the principal special property of chromium-steel is its determined resistance to sudden impact, in consequence of which it is much employed in the manufacture of projectiles, though it has not succeeded for armour-plates. In view of its extreme hardness and difficulty of tooling it has been suggested to make safes from chromium steel.

Iron and Phosphorus.—The principal use of phosphorus is in the manufacture of phosphoric pig, such as is wanted for the basic Bessemer process. In pig-iron phosphorus causes the carbon to more readily approach the combined state, whilst the melting-point is lowered, and the fluidity increased. The last-mentioned property is taken advantage of in cast-iron in making thin castings, and especially for ornamental purposes. In such things, strength does not count for much, the principal object being to obtain a clear and even casting. If strength is required, more than 1 per cent. of phosphorus is not permissible except for dead loads, such as is applied to columns. It is not a desirable constituent in steel, especially in hard steel.

Iron and Sulphur.—The presence of sulphur in iron may be regarded as an impurity; nevertheless, it is nearly always found in the metal, no matter how carefully the smelting operations have been conducted. Iron ores usually contain some sulphur, but coal used for smelting purposes commonly has more, and it has been aptly remarked, that if it were not for the fortunate circumstance that sulphur can be separated in the blast furnace, the whole process of iron and steel manufacture would be rendered practically impossible. Perhaps the only instance where a sulphide of iron is purposely used is in the manufacture of certain cast-iron guns. Sulphur gives rise to blow-holes in castings, and, on the whole, has a very deteriorating effect on steel. Nevertheless, as previously mentioned, it is almost impossible to get rid of it entirely in iron and steel manufacture on the large scale. But whereas '04 per cent. sulphur would render wrought-iron useless, as much as '1 per cent. may be present in steel without interfering with the rolling property of the metal.

Iron and Nickel.—The merits of this alloy have been carefully investigated by Mr. James Riley, of Glasgow,† from which we learn that the metal sets steadily in the mould; is more fluid than ordinary steel when melted; sets more rapidly, and appears to be thoroughly homogeneous. There is less liquation of the metalloids in ingots made of the alloy; whilst the scrap produced in hammering, rolling, shearing, &c., can be remelted in making another charge, without loss of nickel. In nickel-steel there is present essentially nickel, manganese, and iron, with carbon, silicon, phosphorus, and sulphur. A difference in relative quantity of some of these constituents will greatly influence the character of the alloy. In the communication alluded to Mr. Riley gives the results of many tests made by him, to which the student is referred. The general result seems to indicate that the addition of nickel to mild steel considerably increases the elastic limit and breaking stress. With very little carbon, and with 10 per cent. nickel, a very hard alloy was produced. It is stated that steels rich in nickel are practically non-corrodible, and that even those poor in that metal are less corrodible than other steels. Without the assistance of manganese in the alloy the conditions of treatment would be unsuccessful, so that, in reality, we may regard nickel-steel as an iron-nickel-manganese alloy, with carbon, &c. The high price of the alloy is the principal objection to its more extended use, but in special cases this may, to some extent, be counterbalanced by such advantages as increased strength, reduced scantlings, and non-corrodible properties.

Iron and Copper.—One per cent. of copper renders cast-iron hard. It has been generally asserted that copper is a highly undesirable constituent in steel, but recent researches have not altogether confirmed that view. It also renders steel hard, and increases its tensile strength.

Iron and Titanium.—The rich iron-ore districts of Gellivara and Kirunavara, in Sweden, which now supply enormous quantities of the metal to North-western Europe, always show a small percentage of titanium; it occurs also in many other iron ores. In pigs it forms an ordinary alloy with the iron—as much as from ·5 to 1·6 per cent. in certain of those from Ireland. Its active influence in cast-iron, however, seems to be of such little importance, in addition to the circumstance that it is usually present only in such infinitesimal proportions, that it can practically be neglected. Not so, however, with steel. It is stated that titanium steel is harder, stronger, and more ductile than ordinary steel; but its uses up to the present have been very limited.

Iron and Aluminium.—Until aluminium became comparatively cheap, there was no incentive to investigate its effects on iron, as it would have been impossible to have used the alloy in consequence of the high price. Nevertheless, the general behaviour of the two metals was, long before, known to scientists. It follows from the circumstance mentioned, however, that its practical effects on the large scale have only been known during the past few years. The greatest development, as with other aluminium alloys, has taken place in the United States. Aluminium is now being regularly used in that country by many of the largest steel manufacturers.* It is added to steel in proportions of from half-a-pound to several pounds of aluminium to the ton of steel, the purpose of the addition being largely to prevent the retention of the occluded gases in the steel, and thereby to produce solid ingots. It also seems to give extra fluidity to the metal, which allows the making of clearer and sounder steel castings, so that in the steel casting trade in that country it is now almost universally employed. In fact, it is claimed by leading metallurgists who have watched the operation of the manufacture of steel castings, that the largest share of the remarkable development of the past few years in the quality of American steel castings has been due to the use of aluminium. In the manufacture of open-hearth steel, aluminium as used is added in small pieces of from ¼ lb. to ½ lb. weight to the ladle during the tapping operation. The aluminium, as might naturally be supposed from what we have already said concerning it, melts instantaneously, as the temperature of the molten steel is so much above the melting-point of the former metal, and it seems to diffuse with remarkable rapidity throughout the contents of the ladle. The diffusion seems to be complete, and there appears to be no need for special precaution for agitation of the metal for that purpose.

Aluminium added to cast-iron produces an effect similar to that brought about by silicon, *i.e.*, it tends to convert the combined carbon in the iron into the graphitic state, thus causing the iron to be softer, freer from shrinkage, and lessens its tendency to chill. A small percentage of aluminium added to white iron will thus change the character of the metal. Whilst aluminium does not always give any clear advantage when used with good grey iron, its employment with inferor grades of pig-iron in foundry work is very marked and of a highly satisfactory character from the makers' point of view.

A valuable alloy is that formed by the mixture of aluminium with ferro-manganese, which allows the production of a ferro-manganese relatively very low in combined carbon—a property of considerable use with ferro-manganese employed in the manufacture of low carbon steel.

Iron and other substances.—Alloys of iron with cobalt, arsenic, zinc, antimony, lead, tin, &c., have been made, but are not important enough for our purposes to warrant description.

* "Iron and Steel," 1891, p. 117.
† "Journal of the Iron and Steel Institute," 1889.

* See "Mineral Resources of the United States for 1892," p. 250.

GENERAL BUILDING NEWS.

New Casual Wards, Beverley Workhouse.—These buildings, which are just finished, have been designed in a similar style to the new Infirmary completed last year, and are erected on a site adjoining the Workhouse. The principal elevation faces Union-road, and comprises the porter's lodge (which has the female receiving-room and wards behind), and male wards to the right, between which and the porter's lodge is the entrance archway (over the main road to the Workhouse). The gates are of wrought-iron, of an ornamental character. These casual wards provide accommodation for forty-one vagrants, twenty-nine males and twelve females; they consist of an associated ward, affording sleeping accommodation for twenty males; also nine sleeping-cells, eight of which have stone-breaking cells attached. There are in addition six covered stone-breaking bunks in the yard. On the female side is an associated ward for eight females, and sleeping-cells for four. There are also receiving-rooms, bath-rooms, and drying-rooms for clothes, for both male and female divisions. The administrative department, which consists of the porter's lodge and office, and the female attendant's room, is to the left of the entrance-gates. The cells are approached from a central corridor. The premises are heated throughout with Perkins' high-pressure heating apparatus. At the end of the ward for males is the stone-yard. There is also a disinfecting-room, with apparatus on an approved principle. The weigh-engine is under the archway, the beam extending into the porter's office. The architects were Messrs. Hawe & Foley, and the contractor Mr. J. R. Foley, all of Beverley.

Wesleyan Church, Paignton, Devon.—The foundation-stone of a Wesleyan church, about to be erected in Palace-avenue, Paignton, was laid on the 11th inst. The design is Gothic, the main feature in front being a large tracery window. The church will have a nave 67 ft. long by 27 ft. 6 in. wide, with side aisles, making a total width of 51 ft. 6 in. On the east side a small transept will be formed for the organ. The total cost, including the value of the site, is estimated at 2,500*l.* The seating accommodation will be for 550 persons. Mr. W. G. Couldrey and Mr. G. S. Bridgman are the architects, and the contractor is Mr. S. Blatchford, of Torquay.

New Church, Maesteg, Glamorganshire.—At the present time church-building is very active in the diocese of Llandaff, and on the 7th inst. the foundation-stone of St. Michael and All Angels, Maesteg, was laid. The building, which is of English Gothic style, will comprise a tower about 100 ft. in height, a nave with clearstory, large vestries, and a chancel, the choir portion of which will accommodate 150 choristers. The church will be of local stone, with hard Bridgend external stone dressings, while the internal dressings are to be of green Bridgend stone, as also are the arcades, chancel, and arches. Mr. M'Gaul, Bridgend, is the contractor, and Mr. G. E. Halliday, of Cardiff and Llandaff, the architect.

United Presbyterian Church, Kelvinside, Glasgow.—The memorial-stone of this church was laid on Saturday, the 5th inst.. The leading idea of the design, which is Late Decorated, contrasts broad, massive angle piers alternately, with rich tracery in the windows. The entrances are in the frontage to Queen Margaret Drive, and a lofty gable forms the principal feature of the front. The main doorway occupies the centre of the lower stage, and has a richly-moulded and carved arch and panelled tympanum. On each side are cusped headed windows lighting the vestibule; and angle-shafts dividing these from the doorway run up into the sill of the main window above. The gable is flanked by massive angle piers, which are carried up in plain masonry to about 40 ft. from the ground, above which the surface has cusped panelling to the cornice, terminating in conical form with crocketed angles and carved finials, the total height being about 60 ft. Between these piers the whole space is filled by a mullioned window of seven main lights recessed under a deeply-moulded arch, which spans the gable from pier to pier. Under the apex of the gable is a moulded niche with canopy, and over this the gable terminates with a foliated cross. The side-entrances and staircases flank the main gable and have each moulded doorways with elliptical arches, and the staircases are lighted by dwarf mullioned windows with traceried heads. The side elevations are treated similarly to the front, and form a series of three bays, each bay divided by massive angle-piers, the spaces between which are filled by four-light windows of varied design, with traceried heads. The piers are carried up as pinnacles with carved terminals, and the side-walls are finished with an open-work stone parapet between the piers. Internally the church is planned for over 750 sittings, of which about 500 are on the

area floor. The limited site necessitates both side and end galleries; but these will be kept narrow, and the roof has been designed as a single span. The main beams are on moulded shafts and carved brackets attached to the side walls, from which the ceiling is carried up in coved form to the wall-head. Above this the roof is of open construction, the wood principals being moulded, and the whole ceilings finished in panelled lining. The western end is divided into three bays by stone piers and arches, in front of which is the pulpit platform, with the organ chamber beyond. Behind the church, in connexion with a hall, are vestry and other accommodation. The estimated cost of the church is about 5,000*l.* The building is intended to be opened early in next year. The architect is Mr. John B. Wilson, of Glasgow.

Restoration of Parish Church, Dedham, Essex.—The Vicar of Dedham writes to the *Daily Graphic* saying that the parish church is in need of extensive reparation. The roof, the massive timbers which are a support and tie to the walls, are very much decayed, and the windows are all in a bad condition. More than 1,600*l.* have been expended upon the church in recent years; nave, aisles, and clearstories have all been thoroughly repaired, and the flint-work at the base of the tower has been replaced. The foundations are good, and the architect, Mr. Micklethwaite, believes that if the work now advised is executed, the tower will be safe for many years to come. It is a conspicuous feature in the landscape for miles around, and has frequently figured in Constable's paintings.

New Chapel, St. Dominick, Cornwall.—The memorial stone of this chapel was laid on the 1st inst. The *Western Morning News* states that it will be a plain building in the Gothic style, and built of local stone with stucco exterior. At the east end will be a small entrance-porch; and supporting the main wall facing the road on the north side, five buttresses of granite and brick. It is intended to seat about 150 persons. There will be direct internal communication with the old chapel close by, which is to be converted into a schoolroom, and thoroughly renovated. Excluding the value of the site the work will cost 400*l.* Mr. Broad, of Painter's Cross, is the architect; and Messrs. Poad & Bennett, the contractors.

Church Extension, Walsall.—The foundation-stone of the new aisle, which is being erected on the northern side of the parish church at Walsall Wood, was laid on the 7th inst. It is to accommodate 130 people, and the cost is estimated at 800*l.* Messrs. Cresswell Brothers, of that place, are the builders, and the architect is Mr. H. E. Lavender, of Walsall.

New Public School, Glasgow.—The new St. James' Public School, Calton, was opened on the 1st inst. It is designed in a bold Classic style, and is flanked on either side by a wing, in which are placed teachers' rooms, lavatories, &c. The entrances for boys and girls are also placed in these wings. The infants' entrance is at the back, entering from the girls' playground. The school is three stories in height, and is intended to accommodate about 1,400 scholars, of whom about 500 are infants, who will be placed on the ground floor. There is also room for instruction in cookery, washing, and laundry work. There is a large drill-hall on the ground floor, round which are situated the various class-rooms. The latter are 14 ft. from floors to ceilings, and lined with wood to a height of about 5 ft. The cost of the site and building was about 28,000*l.* Messrs. Thomson & Sandilands, of West George-street, were the architects.

SANITARY AND ENGINEERING NEWS.

Water-supply, Bishop's Lydeard, Somerset.—On Wednesday, the 2nd inst., an Inspector of the Local Government Board held an inquiry at Bishop's Lydeard, relative to an application by the Taunton Rural District Council for sanction to borrow 1,200*l.* for the purpose of securing a water supply for the parish. The clerk to the District Council said the water supply was intended for 750 people. For some years past the water in the village had been found to be impure. It was proposed to take water from a spring two miles away, and upon this being analysed by the medical officer, was found to be very good. The spring yielded about fourteen gallons a minute, or 20,000 gallons a day. The cost of constructing a small tank at the spring and laying a four-inch main to the village would be about 1,000*l.* The Inspector promised his report at an early date.

Pollution of the Gareloch, Dumbarton.—At a meeting of the Dumbarton County Council, held on the 7th inst., a report was submitted by the "Sub-Committee on the Pollution of the Gareloch," which disclosed a very unsatisfactory state of affairs. For many years the pollution of the Clyde estuary and of the connected lochs has attracted the attention of the Government and of the Local Authorities, but very little has hitherto been done to remedy the evils that admittedly exist. The inquiry that has just been made refers solely to the pollution of the *foreshores* of the Gareloch, and to the causes of that pollution. The Report states that while there may be doubt as to evil influence on public health from mud permanently covered by sea-water, there can be no serious question as to the general bad effect of putrefying organic matter exposed above ordinary high-water mark, or intermittently between high- and low-water mark. Of these two conditions the latter is much the worse. The alternate drenching of dead organic matter by water, and exposure of it to sun and air, are just the influences which most readily produce offensive and unhealthy decomposition. At the same time, it would be practically impossible to obtain any complete or permanent remedy for these conditions under the provisions of the present Public Health Act. In every individual case it might be necessary to prove the existence of a nuisance not merely unsightly or offensive, and not merely dangerous to health, but actually injurious to health. There would be many difficulties as to the authorship or responsibility for the numberless accumulations of refuse on the shores of the loch; while as to such material as ordinary garden refuse thrown out on the higher parts of the foreshore, though it is obviously objectionable, it might not, in many circumstances, be easily proved injurious to health. The present investigations by the sub-committee have had to do not merely with the deposit of solid refuse from houses and gardens, but with more difficult questions as to other local causes of pollution of the foreshores between high- and low-water mark. Here, as the sub-committee believes, there are two principal agencies at work: (1) the drainage from the dwelling-houses on the shores of the loch, and (2) pollution by vessels anchored in or plying on the loch. With reference to house drainage, it was ascertained that much of it finds its way into the loch, particularly from stables; and in regard to pollution by ships, that also was proved to exist in an extensive form. As a remedy or mitigation of the nuisance, the sub-committee made two suggestions, namely: (1) To have the Gareloch declared a stream under the Rivers' Pollution Act, whereby the Local Authority would not be put to the necessity of proving injury to health from sewage pollution, and the power would then exist to interdict pollution, either by sewage or any other means; and (2) To form one or more scavenging districts by virtue of the Local Government (Scotland) Act, 1894, so that the solid refuse belonging to houses and villages could be satisfactorily dealt with. It was moved and carried unanimously that the Report be laid before the Secretary for Scotland, with a view to having these suggestions carried out.

Manchester Sewage Scheme.—A meeting of the Mersey and Irwell Joint Committee was held on the 7th inst., when the City Surveyor explained the present position of the sewage scheme, in view of the difficulties that have arisen with reference to surrounding local authorities. The City Surveyor said that the amount actually paid up to the 19th ultimo was 556,540*l.*, and the total estimated cost of the existing works was 700,000*l.* Roughly speaking, there was about 100,000*l.* worth of work now in course of construction, and it would take at least twelve months to complete it. This estimate was based upon the assumption that no further difficulties would be met with. There were four contracts to complete, and the one least advanced would take about twelve months. At Davyhulme there had been eleven tanks at work for the past twelve months, having a capacity of twelve million gallons, and the quantity of sewage now being dealt with per twenty-four hours was 13,600,000 gallons. The estimated future flow from the entire population would be upwards of 24,000,000 gallons. In addition, a costly and elaborate plant for the chemical treatment of the sewage and for sludge-pressing was in operation. In addition to the chemical precipitation, provision had been made for filtration through land. Thirty acres had been laid out and underdrained, and were reported by the late Resident Engineer as complete in June, 1894; but he found that sundry alterations were necessary, and this took nine or ten months to complete. The main drains did not show sufficient defects at that time to warrant him in having them relaid; but he regretted to say that after the beds were in use for three months and had given most satisfactory results the main carriers had collapsed, and with one exception the whole of the main carriers would now have to be relaid. The contractor had already faced the difficulty, and was proceeding with the work, which would take two months to complete. The Local Government Board had sanctioned the sum of 25,000*l.* for the construction of the first section of artificial filters on the remaining sixty acres of land at Davyhulme not at present dealt with. He had been carefully watching the experiments that were being conducted at Barking by the London County Council, and a valuable report had been issued by Mr. Dibdin, Chemist to the London County Council. The question now was whether the sewage of Manchester, which entered the works in a practically fresh state, could be treated with as good a result as that at Barking, which reached the works in a putrid condition. This, however, the Chemist was now investigating, and the Committee had, at the Chemist's request, sanctioned the construction of two experimental filters, in order that they might have a practical demonstration of the treatment of the Manchester sewage on the system proposed by the London County Council.

Lighthouse, Rattray Head, N.B. — The Northern Lighthouse Commissioners have recently had a large lighthouse erected on the Ron Rock at Rattray Head, which will be in operation on Monday next the 14th inst. The *Scotsman* states that the Ron Rock is covered by the sea, except at low-water spring tides. The tower is in two stages; the lower portion is 50 ft. in diameter and 42 ft. in height, constructed of heavy granite blocks outside and Portland cement concrete inside. Above this, the tower, 44 ft. in height, is of composition brick-work, surmounted with a coping of granite, the total height of both towers being 86 ft. On the granite coping is fixed a light-room of cast-iron plates, and a lantern with diagonal astragals of gun-metal. The lower tower has two stories, the under one contains the engines for compressing the air for actuating the siren, and in the upper floor are placed the air-receivers and siren. The foghorn is placed on the seaward side of the roof of the lower tower. The upper tower is divided into four stories—the coal and water store, the dry store, the third the kitchen, and above it the bedroom. In order to facilitate the landing of materials a temporary timber gangway was constructed between the shore and the rock. This has been frequently damaged by the waves during the erection of the tower. During the first season good progress was made, the foundation was excavated and three courses of the granite blocks built, when a severe gale happened which washed off some of the blocks of the unfinished fourth course, and shortly after the works were resumed in 1893 a gale swept away some of the inside concrete work which had not had time to harden. During the present season the optical apparatus and machinery for revolving it have been erected; the former was made by M. Lepante, Paris, and the latter by Messrs. Steven & Struthers, Glasgow. The optical apparatus consists of nine panels of refracting prisms, the focal distance of the lenses being 3 ft. The lenses subtend an angle of 80 deg. vertically, this large angle being attained by using Mr. Charles N. Stevenson's bi-convex equiangular prisms above and below the lenses. These prisms render unnecessary the use of flint-glass, which causes great loss of light. The introduction of these prisms, it is stated, results in a saving of from 15 to 20 per cent. of light. The full height of this optical apparatus is 5 ft. 6 in., and the diameter 6 ft. The panels are so arranged as to show a group of three flashes in quick succession every half-minute; the power of the beam of each flash is equal to over 39,200 standard candles obtained by means of paraffin. The engineer was Mr. David A. Stevenson, and the contractor Mr. David Porter, of Aberdeen.

Villages Water Supply, Evesham.—The Evesham Rural District Council has instructed Mr. J. E. Willcox, C.E., of Birmingham, to at once obtain tenders for all works in connexion with the scheme for villages water supply, which embraces some thirty-five miles of mains and the construction of four service reservoirs, and also to proceed with the water supply to Aldington and extensions at Hampton. Mr. Willcox has also been instructed by the Council to submit a scheme for the sewerage of Great and Little Hampton.

FOREIGN AND COLONIAL.

France.—M. Duvillard, engineer, has brought forward a scheme for bringing the water of Lake Leman to Paris. According to his scheme it would be possible, without injuring the navigation of the Rhône, to take from the lake two million cubic mètres of water per day, and to bring it to the capital by a canal which could be constructed in six years.——A definitive decree has placed the management of "Bâtiments Civils" under the Department of Public Instruction and Fine Arts.——The museum at the Sèvres manufactory has received an addition in the shape of a fine collection of Chinese ceramic work, including 841 pieces, the value of which is estimated at nearly 330,000 francs.——The marble bust of Fernel, an eminent physician in the time of Henri II., is to be placed in the principal courtyard of the Ecole de Médecine.——The new Mairie at Issy-la-Moulineaux is to be inaugurated on Sunday. M. Louis Bonnier is the architect. The building is erected on the site of the former Couvent aux Oiseaux, many portions of which have been preserved, and which has become the Salle des Fêtes of the Commune.——At Neuilly-sur-Marne, a few days ago, a large group of school buildings, designed by M. Albert Triau, was opened.——M. Etienne Leroux, the sculptor, has been commissioned by the Municipality of Compiègne to execute a monument of the defence of that town against the Allies in 1814. The monument will consist of a granite stele decorated with palms, flags, the arms of the town, and inscriptions. On the stele will be the bust of the commander who directed the defence.——M. Antonin Mercié is at work on the completion of the monument which the town of Lille is about to erect in honour of the National Defence in the North. The pedestal will be adorned with three standing figures representing "France," "Lille," and "History," the latter engraving on a shield the record of the battles of Bapaume and Pont Noyelles, which are represented on two side bas-reliefs. At the summit, on a pile of cannons and wounded soldiers, is the equestrian

statue of General Faidherbe. The monument will probably be inaugurated in May next.——There is talk of erecting a certain number of statues at various places in Brittany: at Dinan, that of Duguesclin; at St. Brieuc, those of Maréchal de Guébriant and of Admiral Charner; at Pléneuf, that of General de la Motte Rouge; and at Lamballe, the bust of Dr. Jobert of Lamballe.——An important selection of Palissy-ware has been added to the ceramic gallery in the fine art collection at Lisle.——At Louhans, on Sept. 30, a monument commemorative of the 1870-1 war was inaugurated. It is designed by M. Thomasset, architect, and includes a female figure bearing a palm, which has been executed by M. Gauthier.——M. Sirodot, architect, of Dijon, has been commissioned to execute the pedestal of a monument which is to be erected shortly at Boncourt-le-Bois, in commemoration of the battle of Nuits in 1870.——The first length of the new railway line from Lyons to Paray-le-Monial, by the way of Lazanne, has just been opened.——A landscape-painter, M. Verdier, has just committed suicide, at the age of forty-six. He was a pupil of Gleyre, and had obtained an honourable mention in the Salon of 1389.——The death is announced, at the age of 70, of the sculptor Hyacinthe Chevalier, who enjoyed some reputation under the Second Empire. He was a pupil of Toussaint, and had executed a certain number of statues to decorate the walls of Parisian buildings, among others the statue of Eugène Sue at the new Hôtel de Ville.

AUSTRIA.—The Royal Commission of Fine Arts at Vienna has two new members for the coming session. These are Wagner, the architect of the Austrian Royal Academy, and the Curator of the Science and Arts Museum, Herr Ribarz.——The Emperor of Austria has conferred the much-valued distinction of the Iron Cross on Herr Berger, the Vienna City Architect. Herr Berger has been in the service of the Municipality since 1862, and held his present position since 1883. Herr Schurz (also of the Vienna Board of Works) has received a minor distinction.——Vienna is to have an extensive abattoir for pigs. A special commission of experts has been instructed to visit similar institutions in other capitals, previous to deciding on the scheme to be adopted.——The estate of the "Cottage Verein" at Vienna, which is practically being laid out on English principles with villas and bungalows, has increased in popularity, and now includes an extensive area in the Doebling and Waehring suburbs. The experiment of introducing the small English detached house has been successful, but it has not as yet had any appreciable effect on the increase of the huge barracks with small tenements and flats.——The Carl Theatre at Vienna has been reopened after undergoing extensive alterations.——A new National Theatre is nearing completion at Agram. The Emperor of Austria will attend the opening ceremony on the 19th inst. Messrs. Fellner & Helmer are the architects.——A new hospital has been opened at St. Poelten this week by the Emperor of Austria. The building is to be a memorial to the Emperor on the occasion of his Jubilee. It has two hundred beds, and the plans, which were prepared by a specialist, Herr Schnal, of Vienna, are considered exceedingly practical.——The Danube Canal, which passes through Vienna, has been closed in connexion with the extensive improvements lately taken in hand.——A new bridge over the Danube has now been completed between Feteschti and Cernavoda.——The monument to the playwright, Laube, has been unveiled at Sprottau. The statue is in bronze, and comes from Berlin Foundry. Professor Pfuhl is the sculptor.

RUSSIA.—Of the several elaborate schemes which the Czar proposes carrying out—we have lately referred to the new Museum and the proposed Opera House—the intention to erect a large military club-house at St. Petersburg is most popnlar in official circles. The club-house will be open to all officers of the army and navy stationed at the capital, or passing through the city, and, besides the usual club accommodation, will have a hotel wing with 150 bed-rooms. There will also be a large lending library and a co-operative stores in connexion with the institution. The cost of the building is estimated at 1,300,000 roubles, and will be defrayed from the Czar's privy purse. The site is at the corner of the Kirotschnaja and Liteinaja.——Professor Alexander von Bork, a prominent member of the Russian Royal Academy, has died at the age of sixty-five. Professor Bock held many commissions for the Imperial Household and the Russian Government. Amongst his most successful works may be named the Paskiewitsch monument at Warsaw, and some groups at the Peterhof.

SWITZERLAND.—The annual general meeting of the Swiss Architectural Society has been held at Berne. Professor Auer read a paper on his new Houses of Parliament, which have been illustrated in the *Builder*.——The new William Tell monument at Altdorf has been unveiled. The sculptor is Herr Kissling.——The proposed bridge at Berne, the design of which has been the subject of a competition, will now be carried out. The central span of the bridge will measure about 350 ft.——Owing to the constant increase of tourist traffic at Lucerne a new central railway station has been commenced.

MISCELLANEOUS.

GRANITE EXPORTS FROM ABERDEEN TO THE UNITED STATES.—During the year ended September 30, 1895, the value of the manufactured granite exports to the United States, as declared to the consular agent at Aberdeen, was 291,732·42 dols. as against 306,904·70 dols. for the previous year. More than the whole of the decrease is accounted for by the fall in the last quarter of 1894, when trade was very dull. A protracted snowstorm checked work in the first quarter of 1895, which, however, showed a slight rise over the first quarter of 1894. For the second quarters of 1895 and 1894 the figures were respectively 87,225·14 dols. and 77,362 dols.; and for the third quarters 80,034·18 dols. and 74,076·98 dols., and this improvement promises to continue. The exports include a considerable number of fine polished columns, principally for buildings in New York, in Peterhead (red) granite. Most of the larger monuments are also in Peterhead granite, and there has been a greater demand for Hill o' Fare (dark red) granite than the quarries there could supply. The American fancy in red granites has accordingly run a good deal on several varieties of Scandinavian stone. This taste is expected to change sooner or later. Certain grey varieties from Scandinavia and Russia have also been introduced, as well as a good few Scandinavian "labradorites." Altogether, about fifty varieties of granites are now used in the monumental works in Aberdeen—about one-half being British and Irish and the other half Continental. American granite has very rarely figured in these works; but Messrs. J. Whitehead & Sons have in hand an elaborately-carved monumental cross in Westerly (Rhode Island) granite (grey), and Messrs. A. Macdonald & Co., Limited, have imported a parcel of real labradorite.

CATHEDRAL SURVEYORSHIP.—We are informed that the Dean and Chapter of Winchester have appointed Mr. J. B. Colson to the post of Architectural Surveyor of the cathedral and other buildings belonging to the Chapter. Mr. Colson has for some years past discharged the duties of the office as deputy for his father, the late Mr. John Colson.

PARTNERSHIP.—Mr. Edmund Law, architect, and County Surveyor, Northampton, has taken into partnership his head assistant, Mr. Sidney F. Harris. The practice will now be carried on in the name of "Law & Harris, Architects and Surveyors," Northampton.

DEMOLITION OF THE "QUEEN'S HEAD" INN, SOUTHWARK.—We learn that it has been decided to pull down this famous old hostelry. At one time a mansion, it belonged to the family of Poyntings, one of whom was sword-bearer to Jack Cade. Henry VIII. turned it into a store for the artillery and harness made by his armourers in Southwark, and it subsequently was used as a hostelry for coaching purposes.

DISTRIBUTION OF PRIZES, KING'S COLLEGE, LONDON.—On the occasion of the distribution of prizes at King's College, on the 4th inst., by the Master of the Carpenters' Company, Professor Banister Fletcher gave an interesting account of the building construction lectures and classes, of the architectural studio in the college, and of the wood-carving classes. He reported continued progress, and believed that the exhibition of some of the drawings shown that night would convince those present that the work done by the students was of a very thorough character. The total number of students in those classes was 75, an increase of 33 over the preceding year; 42 attended his lectures, 42 constructional drawing, 39 quantities, and 12 the architectural studio, some students, therefore, attending more than one class or series of lectures. The attendances at the wood-carving classes were—day classes, 20; evening classes, 21, which also showed marked improvement. Professor Fletcher mentioned that the number of drawings prepared in the constructional-drawing classes was 273. The prizes, medals, and scholarships about to be distributed would indicate some considerable exertion amongst the students, as also would the exhibition of the students' work in wood-carving. The whole of this was enabled to be accomplished by the generosity of the Carpenters' Company, which annually endowed the classes and gave prizes. The remainder of the expenses on the wood-carving classes, not covered by that endowment, was generously found by the late Master, Mr. Henry Harben; no portion of the expenditure fell upon the ratepayers. There was in that college a splendid free technical museum and library for the youths to avail themselves of.

THE LATE MR. HENRY SMITH.—A correspondent asks us to add to the list of important works in connexion with which Mr. Smith was engaged, the South Middlesex Asylum ("Claybury Asylum"), at Woodford, for the London County Council, the total cost of which amounted to about 425,000*l*.

REGISTERED TELEGRAPHIC ADDRESSES.—We have received the No. 3 Supplement of Sell's "Directory of Registered Telegraphic Addresses" for the year, which corrects the information supplied by the Post Office during the last three months. All further corrections, with those already made, will be incorporated in the volume for 1896.

JOINERS' STRIKE, SWANSEA.—The *Western Mail* says that the Swansea master builders on Monday, the 7th inst., met a deputation of the carpenters and joiners who have been on strike for fourteen weeks for an advance of a halfpenny per hour and a re-arrangement of the working hours. After a protracted sitting the men agreed to resume work at the old rate of wages, 8d. per hour for a week of fifty-four hours.

LEGAL.

ALLEGED INTERFERENCE WITH ACCESS OF LIGHT.

THE case of Hawkins *v.* The Oxford (Limited), came before Mr. Justice Hawkins, sitting as Vacation Judge in the Chancery Division, on Tuesday last, the 8th inst., it being a motion made *ex parte* to restrain the defendants till next motion day from proceeding with the erection of a building at the rear of the Oxford Music Hall in Oxford-street, &c., so as to interfere with the access of light to the premises belonging to the plaintiff. The learned counsel who appeared in support of the application, said that on the 2nd inst. the defendants wrote that it was not intended at present to go on with the work, though they did not admit the right claimed by the plaintiff. However, on Saturday at one o'clock the defendants proceeded with the building, and the work went on all day on Sunday.

His Lordship granted an interim injunction extending over Tuesday next, with leave to serve a notice of motion for that day, the plaintiff entering into the usual undertaking to be answerable in damages.

MEETINGS.

FRIDAY, OCTOBER 11.

Architectural Association.—First ordinary meeting; President's opening address. 7.30 p.m.

SATURDAY, OCTOBER 12.

Glasgow Architectural Association.—Opening of new rooms, 187, Pitt-street. 3 to 5 p.m.

MONDAY, OCTOBER 14.

Clerks of Works' Association.—Paper by Mr. R. Wheeler. Carpenters' Hall. 7.30 p.m.

TUESDAY, OCTOBER 15.

Glasgow Architectural Association.—Lecture by Mr. Malcolm Stark, Hon. President. 8 p.m.

Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. Newsholme on "The Nature of Nuisances." 8 p.m.

WEDNESDAY, OCTOBER 16.

Sanitary Institute (*Lectures for Sanitary Officers*).—Inspection of disinfecting station, St. Pancras. 3 p.m. (Number limited.)

Builders' Foremen and Clerks' of Works Institution.—Quarterly meeting of members. 8 p.m.

THURSDAY, OCTOBER 17.

Institution of Junior Engineers.—Visit to Messrs. Caird & Rayner's works, Commercial-road. 6.30 p.m.

FRIDAY, OCTOBER 18.

Sanitary Institute (*Lectures for Sanitary Officers*).—Professor Bostock on "Trade Nuisances." 8 p.m.

SATURDAY, OCTOBER 19.

Sanitary Institute (*Lectures for Sanitary Officers*).—Inspection of Harrison & Barber's Knacker Yard. 3 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

20,736.—KILNS: *J. Stein*.—Relates to kilns for firing bricks, pottery, and the like, and deals with methods for utilising the heated gases from the kiln in which they are generated, for drying the articles in one or more other kilns. For this purpose a number of kilns are arranged in connexion with each other, and communicate from one to another by flues or passages underneath, leading from a series of holes in the floor of each kiln. There is also a main underground flue, in connexion with the under-flues of the several kilns, and an overhead flue; both of these communicate with a chimney. Dampers are provided for controlling the action of the combined system.

20,782.—ROOFING-TILES: *G. Schulze*.—Deals with improved roofing-tiles and apparatus for manufacturing same. A tile is made with a conical-shaped projecting nose at its bottom side, and grips beneath two adjacent tiles. Recesses are also formed on all the meeting faces of the tiles. A machine for producing the above is also described and claimed.

20,869.—FIREPROOF DOORS: *G. Bowman*.—Consists of a door formed of a layer of boards, arranged on each side of a frame, with the grain running in different directions, and also covered with tinned metal sheets. Between the said layers of boards a core of slag wool or other non-combustible material is interposed.

25,021.—HOT-WATER APPARATUS: *S. Naylor*.—A kitchen-boiler or other water heater for domestic purposes consists of a rectangular cast-iron block having a water space or passage cored out of its interior and placed at the back of the fireplace.

7,284.—WALLS: *K. Siebold*.—Deals with facings for walls and other structures wherein the facers are connected by grooves and tongues, either with the backing, or with each other, or both.

13,628.—WATER-CLOSETS: *J. Barrett*.—Pertains to improvements in water-closet fittings to facilitate the adjustment of, and access to, different parts. The seat is made removable and provided with an improved hinged connexion, whilst simple and effective means for connecting the water-supply pipe with the bowl, and several other novel alterations, are enumerated.

NEW APPLICATIONS FOR LETTERS PATENT.

SEPTEMBER 23.—17,675, E. Becker, Scaffold Bracket.—17,678, B. Rhodes, Water Storage Cistern.—17,680, S. Chantrill, Water-closets, &c.—17,751, C. Hofmann, Stoves.—17,755, H. Woodford, Plane Irons and other Edge Tools.

SEPTEMBER 24.—17,776, T. and A. Houghton, Windows and Sliding Sashes.—17,787, F. Keep, Gates.—17,807,

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Electric Lighting	Battersea Vestry	50*l.*, 30*l.* and 15*l.*	Dec. 12

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Masonic Buildings, West Regent-street, Glasgow	Masonic Hall Co.	J. L. Cowan	Oct. 11
*Chimney Stalk	Edinburgh and Leith Gas Comrs.	R. Mitchell	Oct. 14
Two Houses, Station-road, Filey, Yorks.	G. H. Smith	S. Dyer	Oct. 15
Mortuary and Chapel	Yardley Burial Board	A. H. Hamblin	do.
Offices, The Parade, Neath	T. Williams	Lambert & Rees	do.
Pipe Sewer, Lichfield-road	Brownhills (Staffs.) U.D.C.	J. H. Shaw	do.
*Broken Granite	East Ham U.D.C.	— Savage	do.
Chepstow and Cleebill Stone	Stroud U.D.C.	*Official*	do.
Sewerage Works, Eachill-road	Rishton (Lancs) U.D.C.	do.	do.
Additions to Workhouse	Farnham Union	S. Stapley	Oct. 16
Six Cottages, South Pelaw, near Chester-le-Street	N. E. Ry. Co.	W. Bell	do.
Flagging, Channelling, &c.	Birkenhead Corp.	C. Brownridge	do.
Storeroom, &c. Heathcote Hospital	Warwick Joint Hospital Board	F. P. Trepass	do.
Eight Almshouses, &c Neath	Mr. Llewellyn	G. E. Halliday	do.
Eleven Cottages, Whalley Old-road, Blackburn	Daisyfield Indus. Bees' Co-op. Soc.	J. B. Thornley	do.
*Alterations and Additions to Workhouse	Bromyard Union	A. H. Parker	do.
Church Building Work, Aboyne, Aberdeen		G. Coutts	do.
Hospital, Inverurie, N B.		Jenkins & Marr	do.
*Intermediate School, Whitland	The Managers	Griffiths & Jones	do
Business Premises, Terrace-road, Aberystwith	Misses Owen	Newton & Cheatle	Oct. 17
Labourers' Cottages	Cork Union	*Official*	do.
*Goods Shed, Northampton	M. R. Co.	do.	do.
Sewer, Padbury, &c.	Buckingham R.D.C.	do.	Oct 18
Additions to Workhouse	Wigton Union	do.	do.
Two Blocks Semi-detached Houses, Lightcliffe, Halifax		J. F. Walsh	do
Additions to School, Glasson, Lancaster		Jos Parkinson	Oct. 19
*Kitchen Fittings, Brook Hospital	Met. Asylums Board	T. W. Aldwinckle	do.
Police Station, Higher Ince, near Wigan	Lancashire C.C.	Littler & Son	do.
Pulling-down Houses, Hampstead	Met. Asylums Board	Sennington & Gow	Oct. 21
Conduit, Willington	Burton-upon-Trent Corp.	J. E. Swindlehurst	do.
*Slop Vans and Horse Brooms	Bermondsey Vestry	*Official*	do.
*Iron Gates and Railings	do.	do.	do.
*Barging-away of Earth	do.	do.	do
Sewering (1,417 yds.), &c.	Bowness (Westmoreland) U.D.C.	Lomax & Lomax	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered
Fifteen Houses, Pentre Rhondda, Glam.		J. Rees	Oct. 21
Shops and Houses, Trongate and Kingstreet	Glasgow Impt. Trustees	*Official*	Oct. 22
*Alterations to Lodge, Finsbury Park	London County Council	do.	Oct. 23
Sewerage Works, Denwick-lane	Alnwick U.D.C.	G. Bell	do.
*Putting Down Corehole with Diamond Drill	Belper R.D.C.	W. H. Radford	Oct. 24
Waterworks, Roserea, Ireland		Ryan & Hickson	do.
Enlarging Dubbs Beck Reservoir	Windermere Gas and Water Co.		do
Bacon-curing Factory, Long-avenue, Dundalk		Newton & Son	do
House, Belmont Estate, Hereford	Lanham Bros., Ltd.	R. Walker	do.
*Making-up Roads		Bailey, Denton & Co.	do.
*Erection of Sorting Office, Sydenham	Wood Green U.D.C.	C. J. Gunyon	Oct. 25
*New Premises, Darlington	Com. of H.M. Works	*Official*	do.
*Roadmaking and Sewers Work	N. of E. School Furnishing Co., Ltd.	G. G. Hoskins	Oct. 28
Additions, &c. to Hospital, Great Yarmouth	Hanwell U.D.C.	S. Barnes	do.
Iron Girder Bridge	Luton T.C.	Bottle & Olley	do,
Road Construction, Sewers, &c.	Rugby Freehold Land Society	*Official*	Oct. 29
*Construction of Reservoir, &c.	Merthyr Tydfil U.D.C.	J. T. Franklin	Oct. 31
Technical School Buildings, Bradford-on-Avon, Wilts		G. F. Deacon	Nov. 4
Roads and Drainage, Shirley, Southampton	Committee	T. B. Silcock	No date
Five Cottages, Hunstanton	Hants Lands Building Society	W. B. Hill	do,
*New School Buildings, &c.	Mr. Winlove	E. J. Colman	do,
Laboratory Buildings, Magnus Grammar School, Newark-on-Trent	Staines School Board	W. R. Low	do,
Additions to Schools, near Atherstone, Staffordshire		Evans & Son	do.
House and Shop, The Grove, Ilkley		R. Scrivener & Sons	do.
		C. H. Hargreaves	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Surveyor	Southall-Norwood U.D.C.	200*l.*	Oct. 14
*Clerk of the Works	Holborn Union	3*l.* 3*s.* per week	Oct. 15
*Clerk of the Works	Lancashire Asylums Board	3*l.* weekly	Oct. 21
*Clerk in Accountants' Office	Lambeth Vestry	150*l.*	do,
*Assistant Engineer	Belfast Corp.	300*l.*	do.
*Builders' Foreman	Battersea Vestry	3*l.* 3*s.* weekly	Nov. 5
*Sanitary Inspectors (6)	Hackney Vestry	104*l.* each	Nov. 7
*Farm Manager	Cambridge Corp.	130*l.* &c.	No date

Those marked with an asterisk (*) are advertised in this Number. *Competition, p.* xviii. *Contracts, pp.* iv., vi., *&* viii. *Public Appointments, pp.* xvi., xvii., *&* xviii.

A. Bückel, Apparatus for Bending Pipes.—17,853, W. Voulten, Checks of Hopper Windows.—17,854, W. Voulten, Double Knuckled Hinges, particularly applicable for Casements and Doors.—17.856, W. Thompson, Method of Drying and Keeping Dry Damp Walls, &c.

September 25.—17,886, T. Kemp, Drain Intercepting Trap.—17,894, J. Cook, Grooving-machine for Grooving Wood, &c.—17,895, L. Ower, Fittings of ordinary Sash-windows to Facilitate Cleaning.—17,908, H. Burnet, Laying Drain and other Pipes.

September 26.—17,964, W. Horne and T. Bolas, Adapting luminous or phosphorescent tubes to bricks, tiles, concrete blocks, or terra-cotta ornaments.—17,966, A. Roe, Chimney-pots for preventing down-draught, &c.

September 27.—18,069, F. Hooper, Hinge extension combination ladder and steps.—18,097, E. Hall, Sash-Windows.—18,089, W. Lloyd, Warming Apparatus for greenhouses and other buildings.

September 28.—18,113, G. Coxhead, Glazing Horticultural buildings, &c.—18,121, E. Parkinson, Flushing Cistern.—18,130, H. Collett, Stopper in connexion with intercepting traps.—18,134, J. Glendenning, Window and door fastenings.—18,142, E. Collier, Spring Catch for securing cupboard doors.—18,173, R. Fritz and P. Job, Window.—18,179, E. Tatler, Pavement.

PROVISIONAL SPECIFICATIONS ACCEPTED.

15,200, J. Smith, Ventilation of Sewers, Road Gulleys, &c.—16,312, J. Ross and A. Heiron, Paint, &c.—16,337, R. Harrison, Securing Chimney-pots to Stacks.—17,136, L. Hérard, Artificial Mosaic.—17,154, T. Downie, Window-sashes.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

21,065, J. Boeddinghaus, Fixing Screws to Stones or Walls.—23,116, E. Pearson, Chimney Cowl.—24,000 E. Bruninghoorn, Hand Saws and other Cutting Tools.—7,218, T. and H. Wilcox, Window Fasteners.—14,259, R. Freeman and T. Rackliff, Moulding Presses for Bricks, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 23.—By *P. M. Puckridge* (at Swindon): Upper Studley farm and two cottages, 166 a. 2 r. 18 p., Wootton Bassett, Wilts., f., 3,275*l.*—By *Worsfold & Hayward* (at Hampton): "Rivermead," Belgrade-rd., Hampton, Middlesex, f., r. 28*l.*, 300*l.*—By *Walton & Lee* (at Whitby): "The Station Hotel," Sleights, Yorks., and 2 r. 18 p. f., r. 60*l.*, 1,600*l.*; house, three cottages and eleven plots of building and allotment lands, 6 a. 2 r. 9 p. f., 1,482*l.*; a f. cottage and enclosure of land, 3 a. 0 r. 17 p., 285*l.*; "Lowdale Hall," and 52 a. 2 r. 18 p., f., 2,025*l.*

September 26.—By *Mabbett & Edge* (at Manchester): The Upperwood Estate, Saddleworth, Yorks., comprising 3,316 a., f., 16,000*l.*

September 28.—By *Churton, Elphick & Co.* (at Chester): Mostyn-road, Greenfield, Flint, a f. cottage and three plots of land, 300*l.*; "The Crown and Anchor" public-house and three cottages, u.t. 28 yrs., g.r. 1*l.* 10*s.*, 250*l.*; Basingwerk-road, thirteen houses and two cottages, f. r. 67*l.* 12*s.*, 950*l.*; Mostyn-road, a plot of building land, f., 180*l.*; "Alpha Chapel," f., r. 10*l.*, 300*l.*; house, outbuildings, &c., u.t. 23 yrs., g.r. 5*l.* 10*s.*, 165*l.*; "Old Quay Cottages," f., r. 48*l.* 15*s.*, 650*l.*—By *C. Foster & Son* (at Ongar): "Shelley House," Ongar, Essex, and two enclosures of land, 6 a. 2 r. 23 p., f., r. 85*l.*, 1,150*l.*—By *Morris, Son & Peard* (at Taunton): "Southwell Lodge," Trull, Somerset, and 8 a. 1 r. 37 p., f., 3,000*l.*

September 30.—By *St. Quintin & Son:* "Orchard Cottage." Shepperton, and 1 acre, u.t. 939 yrs., g.r. nil, r. 28*l.*, 360*l.*; an enclosure of building land, 2 a. 1 r. 24 p., f., 200*l.*—By *Hancock, Henley, & Slade:* 13, High-st., Barnes, c., r. 25*l.*, 400*l.*—By *C. Saunders & Son:* 6, Templeton-place, Kensington, u.t. 78 yrs., g.r. 15*l.*, r. 110*l.*, 1,000*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent, r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	8/0/0 — 9/0/0
Teak, E.I.	load	10/0/0 — 16/0/0
Sequoia, U.S. ft. cu		1/7 — 1/10
Ash, Canada load		3/0/0 — 4/5/0
Birch, do.		2/0/0 — 3/5/0
Elm, do.		3/15/0 — 5/0/0
Fir, Dantsic, &c.		2/0/0 — 3/10/0
Oak, do.		2/15/0 — 4/15/0
Canada		6/5/0 — 7/15/0
Pine, Canada red		0/0/0 — 0/0/0
Do. Yellow		2/10/0 — 4/15/0
Lath, Dantsic, fath		4/10/0 — 5/10/0
St. Petersburg		5/0/0 — 6/10/0
Wainscot, Riga, &c., log		2/15/0 — 5/0/0
Odessa, crown		2/15/0 — 5/0/0
Deals, Finland		
2nd & 1st std	100	7/0/0 — 8/10/0
Do. 4th & 3rd		7/0/0 — 8/0/0
Do. Riga		7/0/0 — 8/0/0
St. Petersburg, 1st yellow		9/10/0 — 12/0/0
Do. 2nd yellow		7/10/0 — 9/0/0
Do. white		8/0/0 — 9/10/0
Swedish		7/0/0 — 15/10/0
White Sea		7/5/0 — 14/0/0
Canada, Pine 1st		21/0/0 — 24/0/0
Do. do. 2nd		16/0/0 — 17/0/0
Do. do. 3rd, &c.		8/0/0 — 10/0/0
Do. Spruce, 1st		9/0/0 — 10/10/0
Do. do. 3rd and 2nd		6/10/0 — 7/10/0
New Brunswick		6/0/0 — 7/0/0
Battens, all kinds		5/0/0 — 21/0/0
Flooring boards, sq., 1 in. prep. 1st		0/9/6 — 0/14/6
Do. 2nd		0/6/6 — 0/11/6
Other qualities—		0/4/6 — 0/7/6
Cedar, Cuba	ft.	3½ — 4½
Honduras, &c.		3½ — 4½
Mahogany, Cuba		3 — 6
St. Domingo, cargo av.		3 — 1/0
Mexican do. do.		3 — 4
Tobasco do. do.		3½ — 6
Honduras do.		3½ — 5½
Box, Turkey ton		4/0/0 — 15/0/0
Rose, Rio		7/0/0 — 16/0/0
Bahia		6/0/0 — 15/0/0
Satin, St. Domingo		0/0/5 — 0/1/0
Satin, Porto Rico		0/0/6 — 0/1/6
Walnut, Italian		0/0/3 — 0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/7/6½ — 0/0/0
Bar, Welsh, in London		5/12/6 — 5/15/0
Do. do. at works in Wales		5/2/6 — 5/5/0
Do. Staffordshire, in London		6/0/0 — 6/10/0
COPPER—British cake and ingot		50/12/0 — 50/15/0
Best selected		51/0/0 — 51,15/0
Sheets, strong		57/0/0 — 0/0/0
Chili bars		46/12/6 — 46/17/6
YELLOW METAL	lb	0/0/4 9-16 — 0/0/4⅝
LEAD—Pig, Spanish	ton	11/2/6 — 0/0/0
English com. brands		11/3/9 — 11/5/0
Sheet, English, 6 lbs. per sq. ft. and upwards		12/0/0 — 12'2 6
Pipe		12/10/0 — 0/0/0
ZINC—English sheet	ton	18/5/0 — 18/10/0
Vieille Montagne		18/15/0 — 0/0/0
TIN—Straits		65/15/0 — 66/5/0
Australian		67/0/0 — 67/10/0
English Ingots		69/0/0 — 69/10/0
Banca		66/10/0 — 66/15/0
Billiton		65/10/0 — 66/0/0

OILS.

Linseed	ton	20/2/6 — 20/10/0
Cocoanut, Cochin		24/0/0 — 0/0/0
Do. Ceylon		23/0/0 — 0/0/0
Palm, Lagos		23/10/0 — 0/0/0
Rapeseed, English pale		22/5/0 — 22/15/0
Do. brown		20/15/0 — 21/5/0
Cottonseed ref.		17/5/0 — 17/15/0
Oleine		19/10/0 — 20/10/0
Lubricating, U.S.		5/6/0 — 8/0/0
Do. black		4/9/0 — 6/6/0
TAR—Stockholm	barrel	0/19/6 — 0/0/0
Archangel		0/15'0 — 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender.]

ALNWICK.—Accepted for the erection of boundary-wall, slaughter-houses, &c., for the Urban District Council. Mr. Geoffrey Wilson, Town Surveyor, Council Offices, Green Bat, Alnwick. Quantities by the contractors:—

Masonry.—J. Whinham	£226 10
Joinery.—H. Archbold	55 0
Slating.—J. Purdie	37 10
Plumbing & Smith's work.—J. Young	17 15
Painting.—J. Percy	2 12
Total	£339 7

[Surveyor's estimate £402.]

[All of Alnwick.]

BOLTON (Lancs.).—For the execution of sewerage works, Peel-street, Manchester-road, for the Westhoughton Urban District Council. Mr. Thomas Partington, Surveyor, 14, Church-street, Westhoughton. Quantities by the Surveyor:—

J. Hope	£1,004	15	2	W. & J. Cowburn, Hindley (accepted)	£739 2 11
Brown, Phillips, & Co.	953	5	4		
J. Orrell	770	0	0	G. Baker	703 6 8

BURGESS HILL (Sussex).—For addition to school buildings (East District Board Schools), for the Clayton and Keymer (U.D.) School Board. Messrs. Loader & Long, architects, 54, Old Steyne, Brighton:—

J. J. G. Saunders	£785	W. Taylor	£719
Brown & Sons	777	Oram & Son, Burgess Hill*	597
Steer	724		

* Accepted subject to the approval of the Education Department.

CARDIFF.—For the erection of a house, stables, offices, &c., Fanny-street, Cathays, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff, Quantities by the Engineer:—

Jones & Maddren	£3,072 1 1	Rees & Thomas	£2,653 0 0
W. T. Morgan	3,005 0 0	W. Thomas & Co.	2,587 0 8
D. J. Davies	2,989 6 9	Cadwallader & Hockridge	2,540 13 0
Lattey & Co.	2,984 1 10		
F. Ashley	2,867 15 10	F. Robbins	2,538 13 8
J. Gibson	2,764 14 0	E. R. Evans Bros.	2,483 11 6
Symonds & Co.	2,760 11 11	D. Davies	2,425 0 0
G. Griffiths	2,757 19 4	J. Allen*	2,394 19 2
Turner & Sons	2,659 16 11		

* Accepted.

CARMARTHEN.—For the erection of school buildings, Pentrepoth, for the School Board. Messrs. George Morgan & Sons, architects, Carmarthen:—

D. Jenkins	£6,000	W. Davies	£4,966
Evan Evans	5,350	T. & J. Brown, Llanelly*	4,899

* Accepted.

CARSHALTON (Surrey).—For alterations and additions to "The Cricketers" Inn, for Messrs. Page & Overton, Ltd. Mr. A. Broad, architect, 3, High-street, Croydon. Quantities by the architect:—

E. J. Burnand	£505	Hanscomb & Smith	£497
A. Bullock	494	G. Burrage	493
W. Smith & Son	475	E. P. Bulled & Co.	376
D. W. Barker	470	S. J. Evans, Carshalton*	340

* Accepted.

CHELTENHAM.—For the construction of filter-beds, &c., Dowdeswell, for the Corporation. Mr. Joseph Hall, C.E., Borough Surveyor, Municipal Offices, Cheltenham :—

T. Pedrette & Co.	£5,800 0	Collins & Godfrey,	
C. Malvern & Son	2,945 0	Tewkesbury*	£2,744 10

* Accepted.

COMPTON GIFFORD (Devon).—Accepted for the supply of road-metal, for the Urban District Council. Mr. R. H. Worth, Surveyor, 42, George-street, Plymouth :—

	s. d.	
Devon & Cornwall Stone Co.	5 2	per ton.
Paynter & Davy	4 9	"

[Both of Plymouth]

CORK.—For carved limestone pinnacles, Church of the Holy Trinity, for the Capuchin Community, Cork. Mr. D. J. Coakley, architect, 1, Charlotte Quay, Cork :—

C. Davis	£300	Denis O'Callaghan (accepted)	£300

[Both of Cork.]

DARTFORD.—For the erection of school buildings, Wilmington, for the School Board. Mr. W. Harston, C.E., High-street, Dartford :—

W. Draper	£1,571 0 0	T. J. Barden	£1,327 0 0
Newnes & Brookson	1,430 7 11	J. Lonsdale	1,318 0 0
T. Martin	1,380 0 0	W. Mears	1,220 0 0
T. Wood	1,375 0 0	R. A. Lowe	1,159 0 0

EGREMONT (Cheshire) —For paving and completing coal bays at gas-works, Poulton-cum-Seacombe, Wallasey, for the Urban District Council. Mr. J. H. Crowther, Engineer, Gas and Water Works, Great Float, near Birkenhead :—

Baker & Co., Liverpool £1,471 7 6

FELIXSTOWE —For the erection of a house, Barton-road, for Miss Cobbold. Mr. J. S. Corder, architect, Wimbourne House, Ipswich :—

Fred. Thurman Walton £465

FOLKESTONE.—For the supply of 500 tons broken granite and other road materials, for the Corporation. Mr. John White, Borough Engineer, Folkestone :—

	500 tons Guernsey Granite Siftings. Per ton. s. d.		3,500 yds. sup. York Stone Flagging. Per yd. s. d.
R. L. & J. Fennings	10 3	L. Sommerfeld	6 4
L. Sommerfeld	9 9	J. Farrar & Sons, Ltd.	6 3
J. Mowlem & Co.	9 8	W. Griffiths	6 2
A. & F. Manuelle	9 5	Wm. Horsfall Vint	6 1
G. Le Maitre, Braye-road, Alderney*	7 11	Cooper Bros.	5 9
		A. & F. Manuelle, London*	5 7½

* Accepted.

GREAT YARMOUTH.—For the erection of a tavern, South Quay, for Messrs. E. Lacon & Co. Messrs. Bottle & Olley, architects, 5, Queen-street, Great Yarmouth. Quantities by the architects :—

J. S. Cooper	£1,480	R. Eastoe	£1,194
J. Leggett	1,475	T. Grimble	1,183
G. Beckett	1,220	W. Cork	1,169
Carter & Wright	1,212	G. W. Beech*	1,163
A. E. Bond	1,209		

* Accepted.

[All of Great Yarmouth.]

HASTINGS.—For the supply of road materials (road metal, &c.), for the Rural District Council. Messrs. Jeffery & Skiller, Architects, Hastings :—

Edward Gutsell, St. Leonards-on-Sea ..... 12s. 6d. per yard.

HORNCASTLE (Lincs.).—For the supply of 650 tons XX. slag, for the Rural District Council :—

	Per Ton. s. d.		Per Ton. s. d.
Ealip Iron Co.	8 3	W. S. White & Co.	5 10½
W. Grimley & Son	8 1	Butterley Iron Co., Butterley (accepted)	5 7
T. Feather	7 0½		
Wingerworth Iron Co.	6 1½		

HORNCASTLE (Lincs.).—Accepted for the supply of materials for construction of footpaths, Mareham-le-Fen, for the Rural District Council :—

Atkin & Thorpe, Mareham-le-Fen £196 4 3

HORSELL (Surrey).—For the erection of a residence for Mrs. Dicks. Mr. Robert Clamp, architect. The Retreat, Woking :—

Higlett & Hammond	£1,868	James Harris & Son,	
John Sims	1,824	Woking (accepted)	£1,687
P. C. May	1,743		

LAVENHAM (Suffolk).—For the erection of school buildings, for the School Board. Mr. J. S. Corder, architect, Wimbourne House, Ipswich :—

Howard	£4,299	West	£3,740
Orfeur	3,995	Grimwood, Sudbury*	3,715
Gitling & Coe	3,925	Coulson & Lofts †	3,600
Brown	3,798		

* Accepted. † Withdrawn.

LAVENHAM.—For the erection of a cemetery-chapel. Mr. J. S. Corder, architect, Wimbourne House, Ipswich :—

J. H. Castle	£194	Death, Bildeston*	£185

* Accepted.

LEICESTER.—For the erection of a factory at Sileby, for Messrs. Knight & Co. Mr. J. Smith, architect, Briton-street, Leicester. Quantities by the architect :—

W. Starkie	£777 0 0	J. Mason & Sons	£655 0 0
C. Horspool	660 10 0	J. N. Hill	651 11 8½
M. Gurney	660 0 0	J. H. Clayton*	610 0 0

* Accepted.

[All of Leicester.]

LISBURN (Ireland).—Accepted for alterations, &c., to workhouse, for the Union Guardians. Mr. J. Hunter, architect, Boardroom, Workhouse, Lisburn :—

James McNally, Lisburn £357 5 4

LLANDYFODWG (Wales).—For additions to school buildings, Nantymoel, for the School Board. Mr. J. Rees, architect, Pentre Rhondda :—

P. Gaylard, Bridgend £650

LONDON.—For the execution of wood-paving works, New King's-road, Wandsworth Bridge-road, for the Fulham Vestry. Mr. Chas. Botterill, Surveyor, Town Hall, Walham Green, S.W. :—

E. Parry	£3,150	S. Hudson	£2,936
G. Wimpey & Co.	3,069	Improved Wood Paving Company	2,670
Jones & Co.	3,045		

LONDON.—Accepted for structural alterations, new granite front and fittings, 237, Finchley-road, for Mr. H. G. Randall :—

W. Sumner & Co., Ltd. £1,850

LONDON.—Accepted for fittings, &c., 259, Finchley-road, for Mr. T. F. Appleyard :—

W. Sumner & Co., Ltd. £590

LONDON.—Accepted for the construction of dairy, West Hampstead-mews, for Messrs. Welford & Sons, Ltd. Mr. A. T. Webb, architect :—

W. Sumner & Co., Ltd. £173

LONDON.—For structural alterations and fittings, 201, Regent-street, for Messrs. Goss, Ltd. Mr. T. Gibbs Thomas, architect :—

Sage	£2,807	W. Sumner & Co., Ltd.	£2,397
Maw, Son, & Thompson	2,668	Powditch & Co.	2,210
Drew & Cadman	2,440	Allard & Co.	1,880

LONDON —Accepted for fittings, 235, Finchley-road, for Messrs. Wellens & Co. :—

W. Sumner & Co., Ltd. £175

LONDON.—Accepted for alterations and shop fittings, 179, Regent-street, for the Arctic Light Co. :—

W. Sumner & Co., Ltd. £230

LONDON.—For making-up Seymour-road (1st section), for the Hornsey Urban District Council :—

James Bloomfield	£1,111 15 9	Thomas Adams, Wood-green*	£1,021 4 4
William Griffiths	1,101 19 6		
F. A. Jackson & Son	1,070 0 0		

* Accepted.

LONDON.—For the erection of two semi-detached houses, Fawnbrake-avenue, Herne Hill, for Mr. R. A. Sanders. Mr. Edward B. Ellis, architect :—

A. Porter	£1,700	J. & C. Bowyer	£1,675
J. Ham	1,675	W. D. Palmer	1,593

LONDON.—For the erection of house in Sunray-avenue, Herne Hill, for Mr. R. A. Sanders. Mr. Edward B. Ellis, architect :—

W. Downs	£2,478	A. Porter	£1,890
W. D. Palmer	1,947		

LONDON.—For rebuilding No. 7, Kensington High-street, W., for Messrs. Frank Giles & Co. Mr. George Edwards, architect, 52, Cannon-street, E.C. :—

Leslie & Co.	£2,935	R. E. Williams & Sons	£2,500
Knight	2,875	Gaze	2,495
Ward & Lamble	2,743	C. Wall	2,395
Stimpson & Co.	2,650	Scharien & Co. (accepted)	2,348
Martin, Wells, & Co.	2,600		

LONDON.—For enlarging the dining-hall and rebuilding kitchen at the Kensington Infirmary, for the Guardians of St. Mary Abbot's, Kensington. Mr. T. W. Aldwinckle, architect, 1, Victoria-street, Westminster :—

Ballard	£3,495	R. E. Williams & Sons, Battersea (accepted)	£2,470
Ryan Bros.	3,393	T. White & Son	2,420
W. Wallis	2,987	W. Johnson & Co., Ltd.	2,395

[Architect's estimate, £2,500.]

LONDON.—Accepted for the erection of five villas, Normanton-road, South Croydon, for Mr. J. Kendall. Messrs. Homer & Ridler, architects, 35, Bucklersbury, E.C. :—

E. Prout £6,725

LONDON.—For the erection of a Methodist Church and school at Waverley Park, Nunhead, S.E. Mr. Robt. Clamp, architect, Woking. Quantities by Mr. H. Webster :—

J. E. M. Wilcox	£4,339 0 0	Lilly & Lilly	£3,659 0 0
R. N. Walker	4,242 11 6	Thompson & Beveridge	3,569 0 0
R. Soper	3,929 10 0	B. W. S. Belam	3,400 0 0
Leaver & Sons	3,858 0 0	James & Co.	3,400 0 0
B. W. S. Balaam	3,777 0 0	Josh. Groom	3,397 0 0
C. Robson	3,718 0 0	R. A. Lowe	3,237 0 0
T. White & Son	3,700 0 0	E. Jones, Peckham*	3,142 0 0
E. Steer	3,699 14 0		

* Accepted subject to modifications.

LONDON.—For alterations and additions to premises, East-road, City-road, for Messrs. Dottridge Bros. Mr. J. H. Richardson, architect, 270, Uxbridge-road, Shepherd's Bush :—

Beer & Gash	£473 0	Todd	£423 10
Ivory	447 0	Webkin	388 0
Bateman	427 0		

LONDON.—For the erection of a Town Hall and Public Offices for the Hammersmith Vestry. Mr. J. H. Richardson, architect, 270, Uxbridge-road, W. Quantities by Mr. Walter Herring :—

		Credit for old materials. £
Scharein & Co.	£27,271	120
Stimpson & Co.	26,000*	160
Kilby & Gayford	25,861	—
Shillitoe	25,750	100
Charteris	24,975	85
Dearing & Son	24,675	—
Minter	24,561	30
Wallis	24,795	200
Todd	24,473	100
Gregory	24,477	120
Foster & Dicksee	24,495	50
Kearley	23,956	—
Wimpey & Co., Hammersmith*	24,246	333
Adamson & Son	24,166	275
Lily & Lily	23,887	—

* Accepted.

LONDON.—For the construction of a galvanised corrugated iron building, Crawford-street, Canning Town, for the West Ham Town Council. Mr. Lewis Angell, Borough Engineer, Town Hall, Stratford, E :—

W. Harbrow	£283 0	J. B. Hollom & Co.	£198 0 0
Constructional Iron Works Co.	281 0 0	W. Glover & Sons	188 0 0
Humphreys, Ltd.	237 0 0	John Lysaght	169 0 0
W. Jones & Sons	210 6 9	Croggon & Co.	167 13 0
W. Whitford & Co.	198 10 0	Blackwall Iron Co., Blackwall*	163 10 0

* Accepted.

LONDON.—For alterations to committee-room, for the Guardians of Bethnal Green. Mr. G. E. Holman, architect :—

Young & Son	£520	White & Son	£230
S. H. Craig	273	Holland & Hooker*	204

* Accepted.

LONDON.—For alterations to Workhouse of St. George's-in-the-East. Messrs. Wilson, Son, & Aldwinckle, architects :—

Holland & Hooker	£157 0	Darby	£84 0
Benton	155 10	Vigor	80 0
Sparkes	97 0	H. Wall (accepted)	73 0
Young	94 10		

LONDON.—For reinstating premises after fire in Upper Russell street, Bermondsey. Messrs. Barnes-Williams, Ford, & Griffin, architects, St. Thomas' Chambers, London Bridge :—

W. & H. Castle	£889	Chalkley (accepted)	£761
B. Wells	778		

LONDON.—For the erection of ten shops and fifteen residences in flats at Chepstow-place, Bayswater. Mr. E. J. Stubbs, architect :—

Howell J. Williams	£31,250	Perry & Co.	£28,989
Boyce	30,890	Allen	28,665
E. Lawrence & Son	30,450		

LUTON (Beds).—For paving, &c., Arthur-street, Bolton-road, and others, for the Town Council. Mr. A. J. L. Evans, Borough Surveyor, Town Hall, Luton. Quantities by the Borough Surveyor :—

Gloucester-road.

G. Kingham	£627 9 0	W. C. Haselgrove	£489 17 6
Free & Sons	537 19 0	Victoria Stone Co., Kingsland-road*	468 8 0
T. Adams	528 11 8		

[Surveyor's estimate, £614 19s.]

Bolton-road.

G. Kingham	£661 4 0	W. C. Haselgrove	£527 15 6
T. Adams	583 8 3	Victoria Stone Co., Kingsland-road*	508 12 2
T. Free & Sons	571 14 0		

[Surveyor's estimate, £657 3s. 8d.]

Arthur-street.

G. Kingham	£565 0 2	W. C. Haselgrove	£520 6 6
T. Adams	537 6 2	Victoria Stone Co.*	497 19 1
T. Free & Sons	535 15 0		

[Surveyor's estimate, £556 16s. 7d.]

Upper North-street.

G. Kingham	£339 4 6	T. Free & Sons	£280 2 0
T. Adams	320 6 0	W. C. Haselgrove*	249 16 0

[Surveyor's estimate, £291 16s. 6d.]

* Accepted.

MAIDENHEAD.—For making a new road, All Saints' Estate, for Mr. N. C. Thompson, and the Maidenhead Artizans' Dwellings Company, Ltd. Mr. H. D. Tilly, surveyor, 50, High-street, Maidenhead :—

W. Wadey & Co.	£159 0 0	S. Shaw	£97 10 7
W. Lee & Son	138 0 0	W. Sandford	95 0 0
J. Bailey	105 0 0	R. Oliver, Twyford*	68 13 0

* Accepted.

MANSFIELD WOODHOUSE (Notts.).—For the execution of sewerage works, Portland-street, for the Urban District Council. Mr. Frank Cook, C.E., Surveyor, Mansfield Woodhouse :—

Fisher Bros.	£110 3
J. Ashley, Mansfield Woodhouse (accepted)	91 15

MARKINCH (Fifeshire).—Accepted for the erection of a police station. Mr. D. Henry, architect, Church-square, St. Andrews :—

Masonry.—D. Nairn, Ladybank	£416 9 0
Joinery.—A. Smith, Cupar	102 6 5
Plumbing —A. Smith, Cupar	39 19 6
Slating.—T. Davidson, Markinch	54 5 0
Plastering.—Robb & McIntosh, Markinch	26 3 3
Cell-fittings.—C. Smith & Son, Birmingham	27 3 0

MAYFORD (Surrey).—For the erection of two pairs of cottages, for Mr. Joseph Martyr. Mr. R. Clamp, architect, Woking :—

G. Allard (accepted) ..... £365 per pair.

NORWICH.—For the erection of a church, St. Catherine's Hill, for the Sisters of Nôtre Dame. Mr. F. E. Banham, architect Beccles :—

F. J. Allen, Beccles £1,715

PELTON (Durham).—Accepted for the erection of fifteen houses, near Chester-le-Street. Mr. G. A. Kerrich-Walker, architect, 33, Westgate-road, Newcastle-on-Tyne :—

C. Groves, Chester-le-Street £2,015

PONTYMISTER (Mon.).—For the erection of school buildings and additions to the present schools, for the Risca School Board. Mr. G. Rosser, architect, Victoria-buildings, Abercarn. Quantities by Mr. R. L. Roberts, Newbridge :—

H. David & Sons	£3,239	E. C. Newby †	£2,338
Lawson & Co.	3,052	J. Linton	2,295
Williams & Thomas	2,878	W. R. Pitt	2,240
D. C. Jones &Co.	2,743	T. Westacott	2,235
Watkin Williams	2,695	A. Richards	2,188
Hatherly & Carr	2,676	J. Jenkins	2,171
J. Edwards	2,515	J. Pritchard, Pontymister*	2,162
J. Monks & Co.	2,392	C. F. Morgan	2,108

* Accepted. † For school only.

WANSTEAD.—For making up sundry roads for the Urban District Council :—

	Asylum-road. £ s. d.	Dangan-road. £ s. d.	Mornington-road. £ s. d.	Wellington-road. £ s. d.	Woodbine-place. £ s. d.
W. Gibbs & Co., Ilford	99 0 0*	329 0 0	199 16 0	337 0 0	231 15 0
J. Jackson, Forest Gate	111 9 8	297 10 2*	168 5 5*	322 4 9*	125 17 2*
J. Jackson	123 0 0	377 0 0	193 0 0	364 0 0	180 0 0
W. Nicholls	124 16 0	398 4 0	182 3 0	378 17 0	207 9 0
W. Griffiths	123 11 5	411 11 5	182 19 9	333 13 9	159 0 7
Rutty	122 1 3	430 19 10	184 18 0	362 15 6	156 13 2
G. Wilson	107 17 0	327 7 0	179 6 0	385 12 0	173 0 0
J. Adams	131 0 0	418 0 0	204 0 0	385 0 0	160 0 0
J. Reeves	148 0 0	368 0 0	228 0 0	368 0 0	148 0 0
Surveyor's estimate	130 0 0	462 0 0	240 0 0	390 0 0	150 0 0

Accepted.

SOUTHEND.—For the erection of a home for cripples, for the Council of the Ragged School Union. Mr. G. E. Holman, architect, 6, King's Bench Walk, Inner Temple. Quantities by Mr. A. K. Ball, 118, Holborn :—

E. Lawrence & Son	£3,878	Whur	£3,345
McCormick	3,499	Darke & Son	3,315
Baker & Wiseman	3,498	White & Son	3,218
T. H. Craig	3,436		

STOWMARKET (Suffolk).—For the erection of a house and shop, Market-place, for the Stowmarket Charity Trustees. Mr. H. G. Bishop, architect, Stowmarket :—

Kenney	£2,847	Andrews & Murray,	
West	2,263	Stowmarket (accepted)	£1,913

THAKEHAM (Sussex).—For the supply of road-metal, for the Rural District Council :—

	Cubic Yards.	Price per cubic yd. s.	d.
Wm. Hudson, Brighton	80	7	9
	20	7	3
	40	8	0
	100	8	0
R. Lillywhite, Cootham, Pulborough	50	8	0
Wm. Goscher, Pulborough	120	8	0
	240	8	0

WALTHAMSTOW.—For the erection of a board-room at Cleve and, for the School Board. Mr. W. A. Longmore, architect :—

Holland	£1,071	R. & E. Evans*	£733
J. A. Reid	945	Morrison & Godwin	721
Fuller & Son	895	Holland & Hooker †	695
W. Lawrence	773		

* Accepted. † Too late.

WATFORD (Herts.).—For the supply of 600 tons of broken granite, &c., for the Urban District Council :—
W. A. Judkins, Nuneaton, 9s. 11d. per ton.

WIMBLEDON.—For making-up roads, for the District Council :—

	Trafalgar-road.	Wycliffe-road.	South Pk.-rd.	Cowper-road.
E. Iles	£566	£564	£1,641	£541
S. Hudson	718	742	2,129	728
A. S. Catley	700	760	2,240	650
T. Adams	515	535	1,546	562
[Surveyor's estimates	680	525	1,880	580]

WINGATE (Durham).—For the construction of reservoir, &c., for the Directors of the Wingate and District Water Company, Limited :—

J. Howe & Co.	£4,197 10 0	C. B. Williamson & Co.	£3,244 19 9
J. Davison	3,835 10 3	T. Bell	2,959 19 9
H. Curry & Son	3,750 14 6	J. G. Rutter & Son	2,904 19 4
J. Thompson	3,560 0 0		
H. S. Sudron	3,422 5 0		

WOKING.—Accepted for making a new road on the Hill View Estate. Mr. R. Clamp, surveyor :—
James Whitburn, Woking Village £495

WOKING.—For the erection of a cottage, Oakfield-road, for Mr. W. Dredge. Mr. R. Clamp, architect :—

G. Allard	£309	W. R. Roake, Horsell	
W. Gale	293	Moor (accepted)	£265

WOKING (Surrey).—For the construction of roads, with surface-water drains, West Hill Park Estate, for the National Land Corporation, Limited. Messrs. Pooley & Follett, surveyors, 21, John-street, Adelphi, W.C. :—

S. Chafers	£2,227 0 0	T. Adams	£1,699 0 0
W. Griffiths	2,124 0 0	S. Kavanagh	1,644 7 6
W. Cunliffe	1,813 10 0	J. A. Franks	1,599 0 0
W. Nicholls	1,718 0 0	J. Williams	1,543 13 2

WOODBRIDGE (Suffolk).—For the erection of banking premises, The Thoroughfare, for Messrs. Bacon, Cobbold, Tollemache & Co. Mr. T. W. Cotman, architect, Northgate-street, Ipswich :—

W. J. Smith	£3,364 0 0	F. Dupont	£3,125 0 0
J. Fosdike	3,361 12 4	Parkington & Son	3,080 0 0
G. Barrell	3,298 0 0	E. Adams	2,965 9 0
F. Bennett	3,199 0 0		

WREXHAM.—For the erection of C.M. Church and schoolroom at Brymer. Mr. J. E. Lash, architect, 5, Temple-row, Wrexham :—

S. Moss	£2,003	E. Bradshaw, Wheatsheaf, Wrexham*	£1,935
A. Hulse	1,945		
T. Williams	1,940		

* Accepted.

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W. L. (amounts should have been given).

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THE INDEX, with TITLE-PAGE, for Volume LXVIII. (Jan. to June, 1895) was given as a supplement with the number for July 13.

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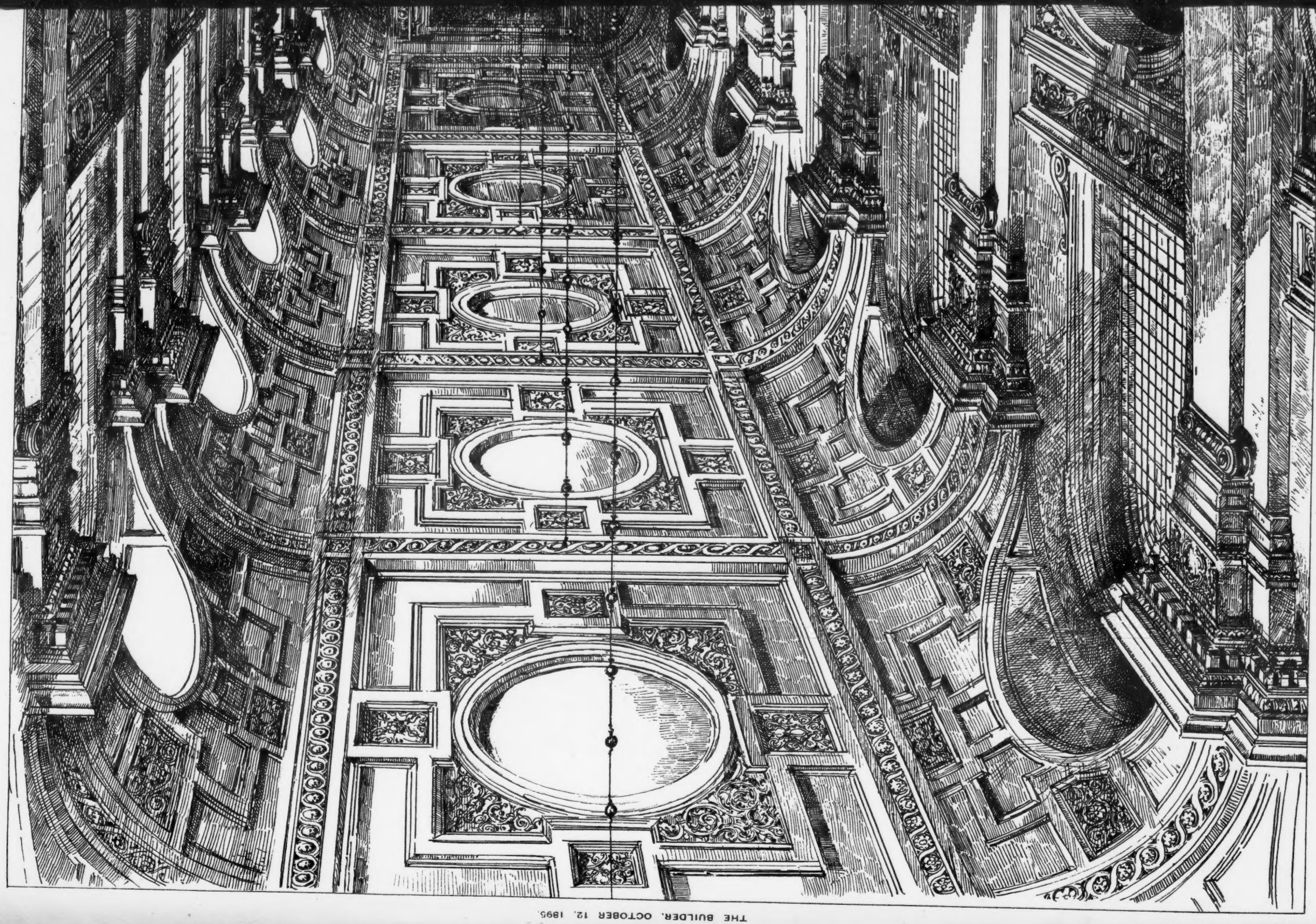
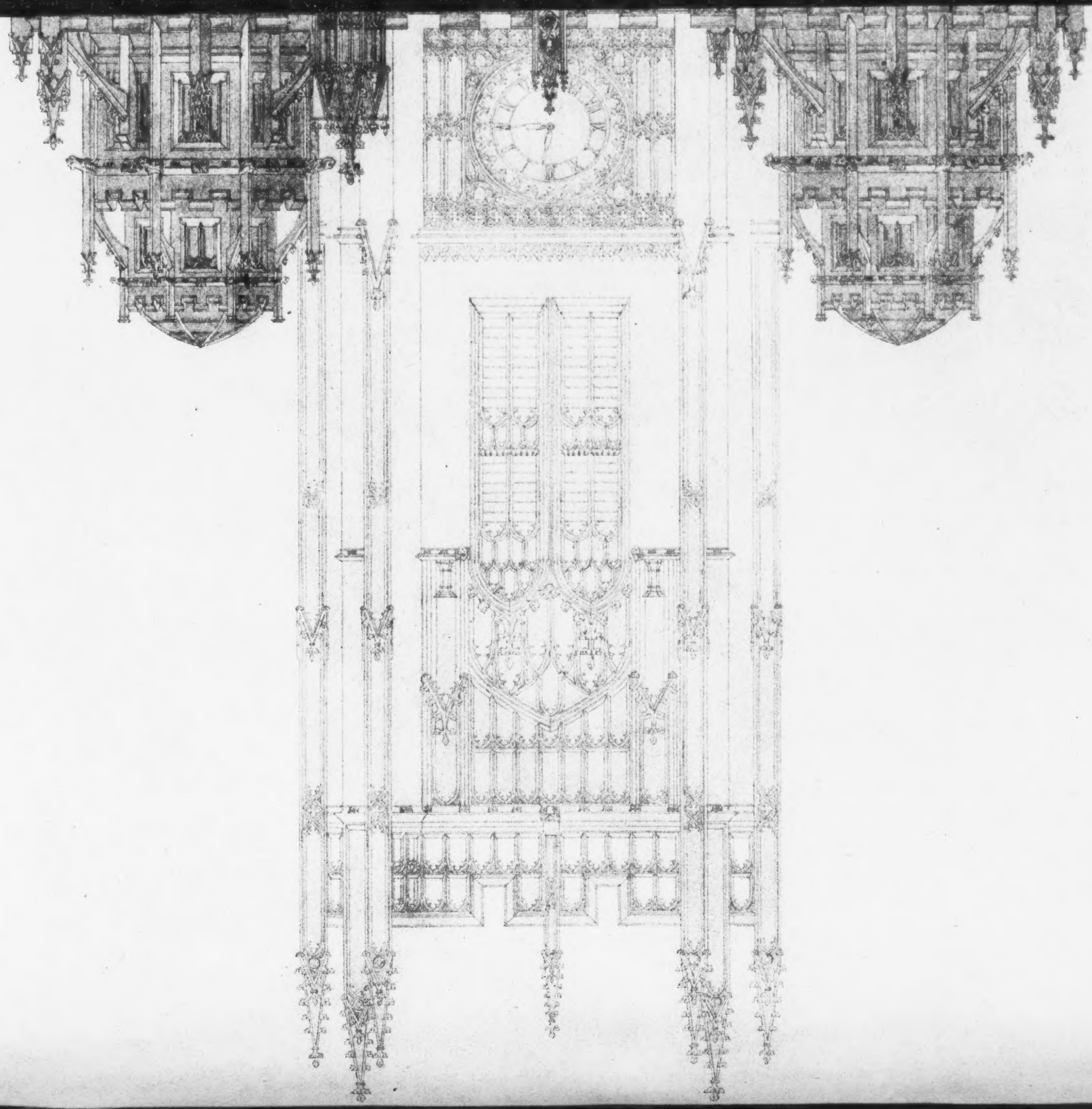
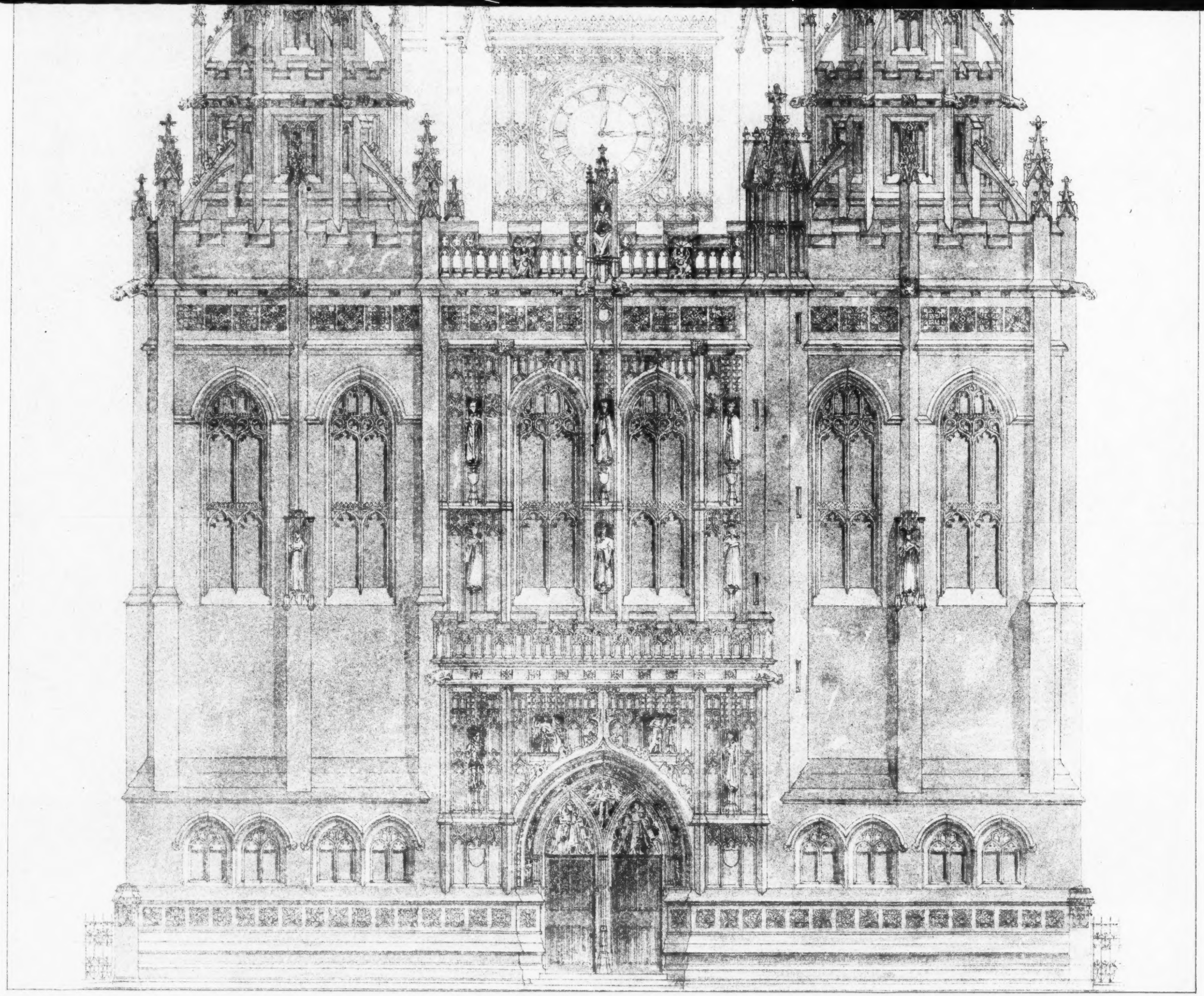


PHOTO-LITHO. SPRAGUE & Co. 4 & 5 EAST HARDING STREET FETTER LANE, E.C.

CHURCH OF THE MOST HOLY REDEEMER, CHELSEA: INTERIOR VIEW.—Mr. E. Goldie, Architect.





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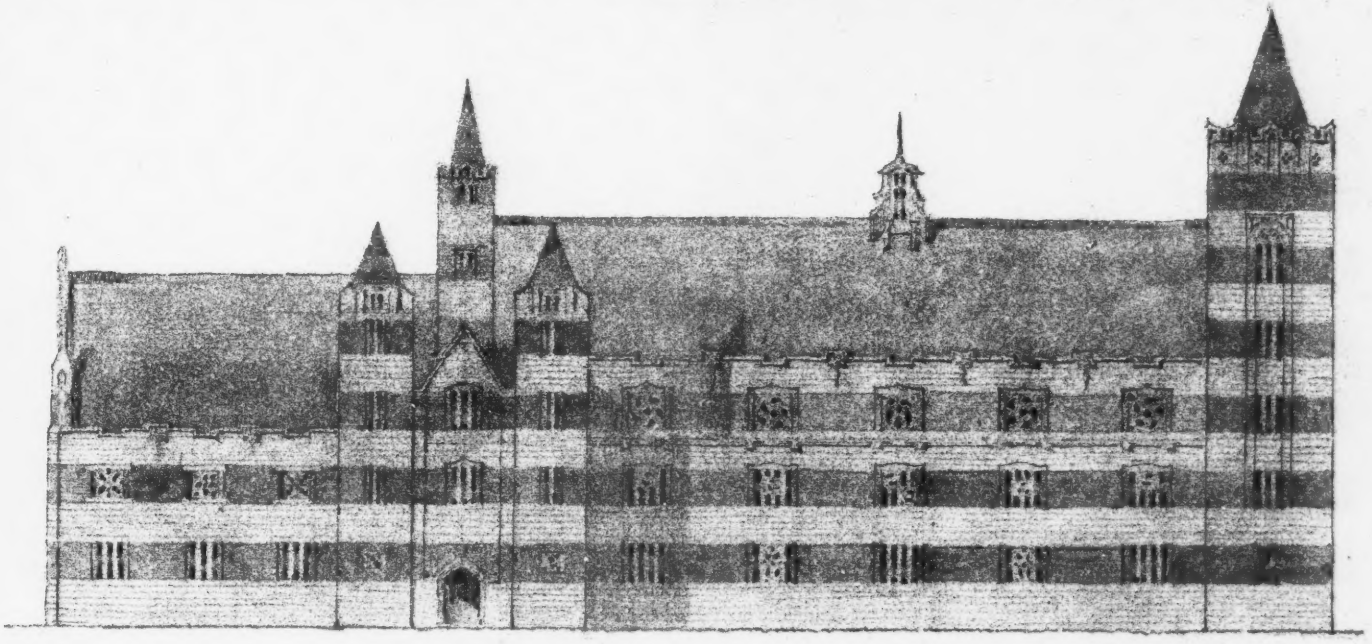
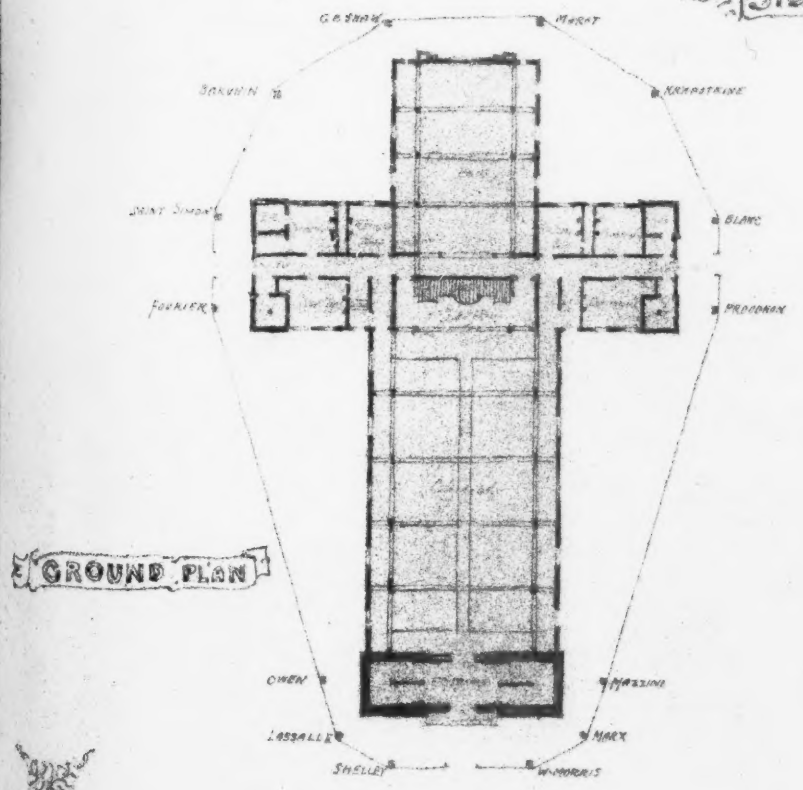
PROPOSED WEST FRONT, MANCHESTER CATHEDRAL.—Mr. Basil Champneys, Architect.

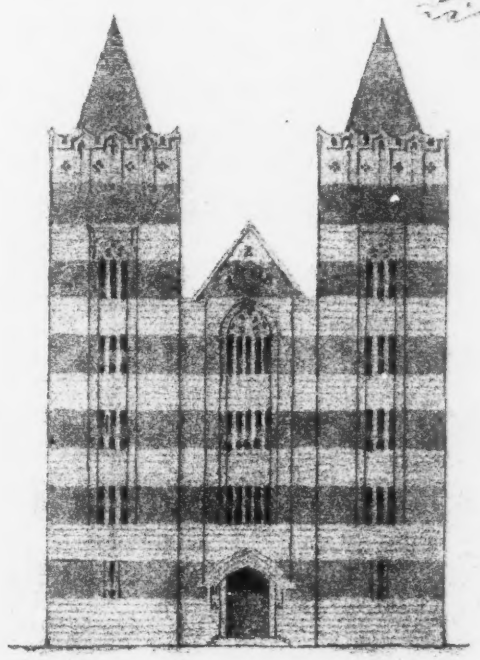


SIDE ELEVATION

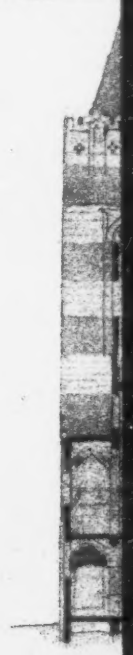
A LABOUR CH



GROUND PLAN



FRONT ELEVATION



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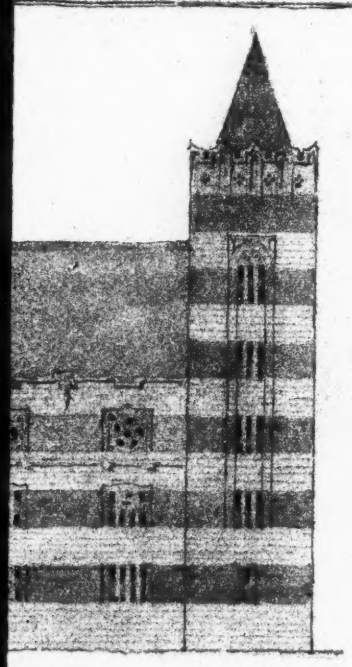
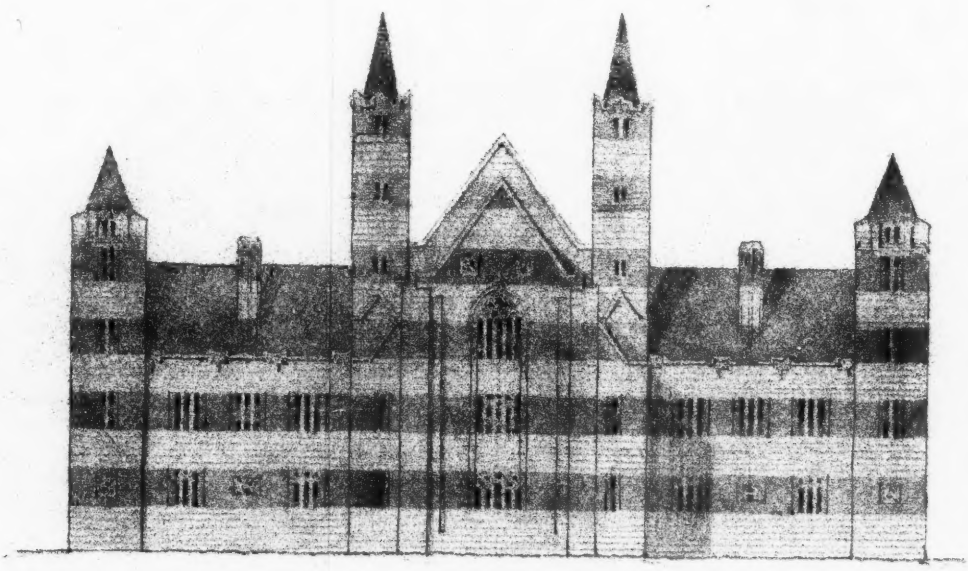
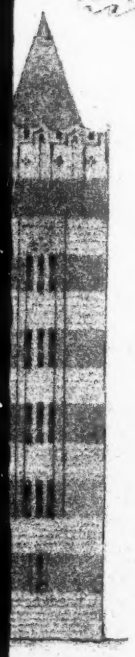
A LABOUR CHURCH.—Design by Mr. G. L.

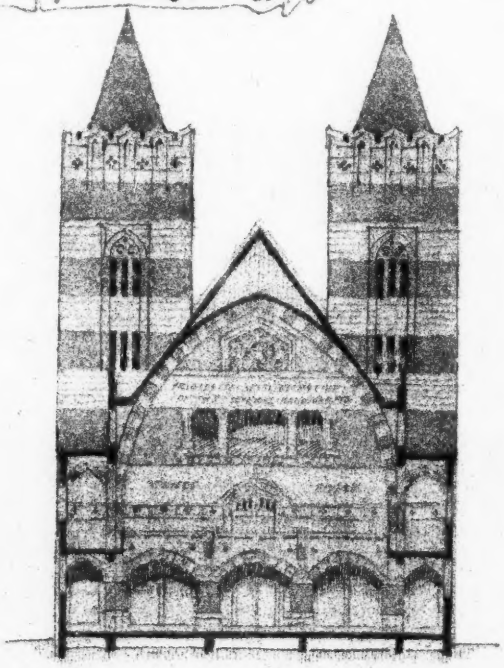


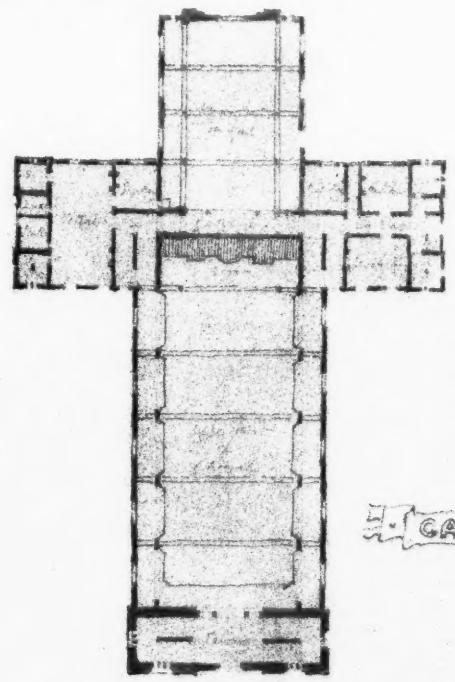


A LABOUR CHURCH

END ELEVATION







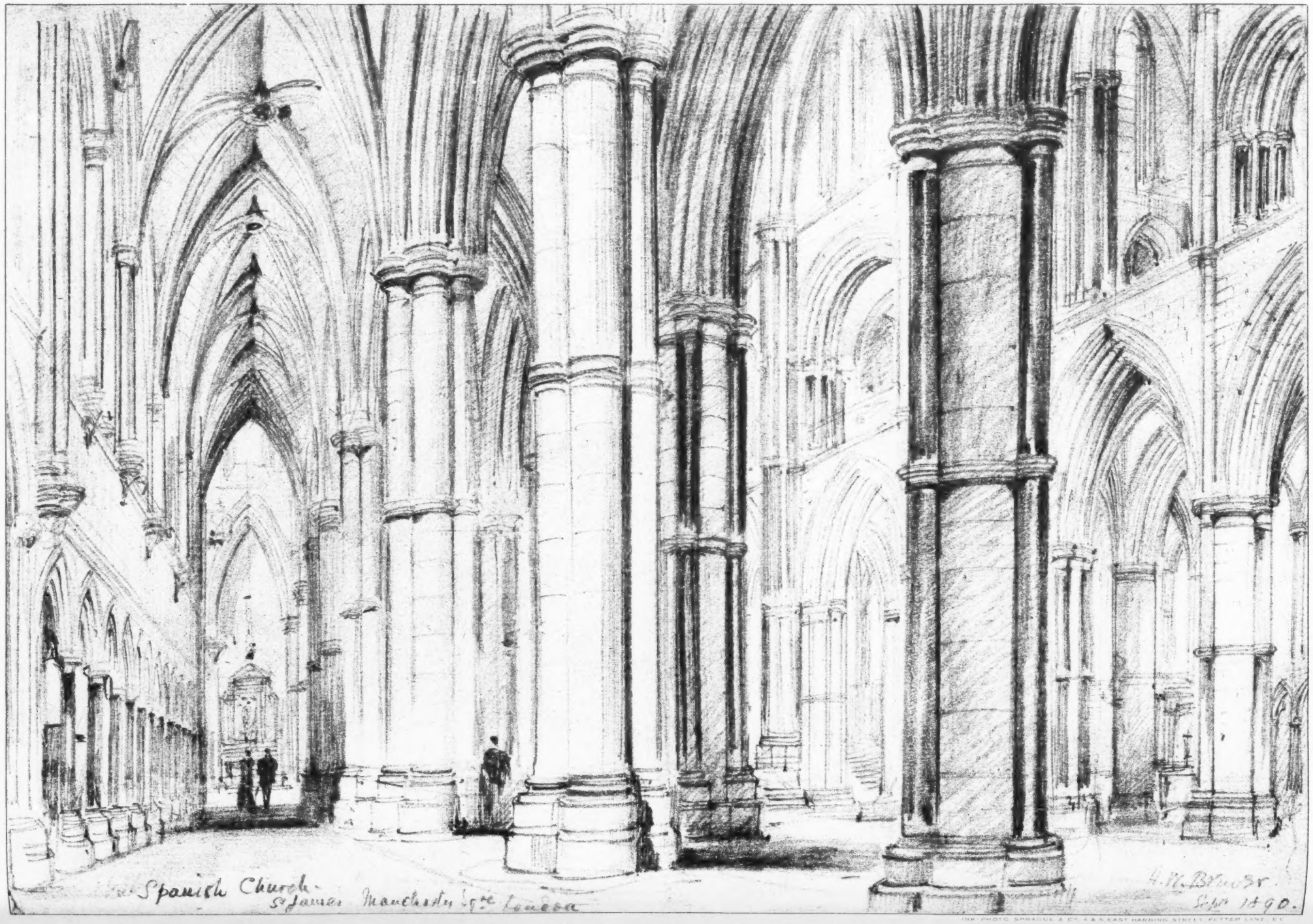
GALLERY PLAN

ON

CROSS SECTION

INK-PHOTO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

ABOUR CHURCH.—Design by Mr. G. L. Morris.



INK PHOTO SPRAGUE & CO 4 & 5 EAST HARDING STREET FETTER LANE E.C.

PHOTO SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE E.C.

CHURCH OF ST. JAMES, SPANISH PLACE: VIEW OF NAVE FROM CHANCEL.—Messrs. Goldie, Child & Goldie, Architects.